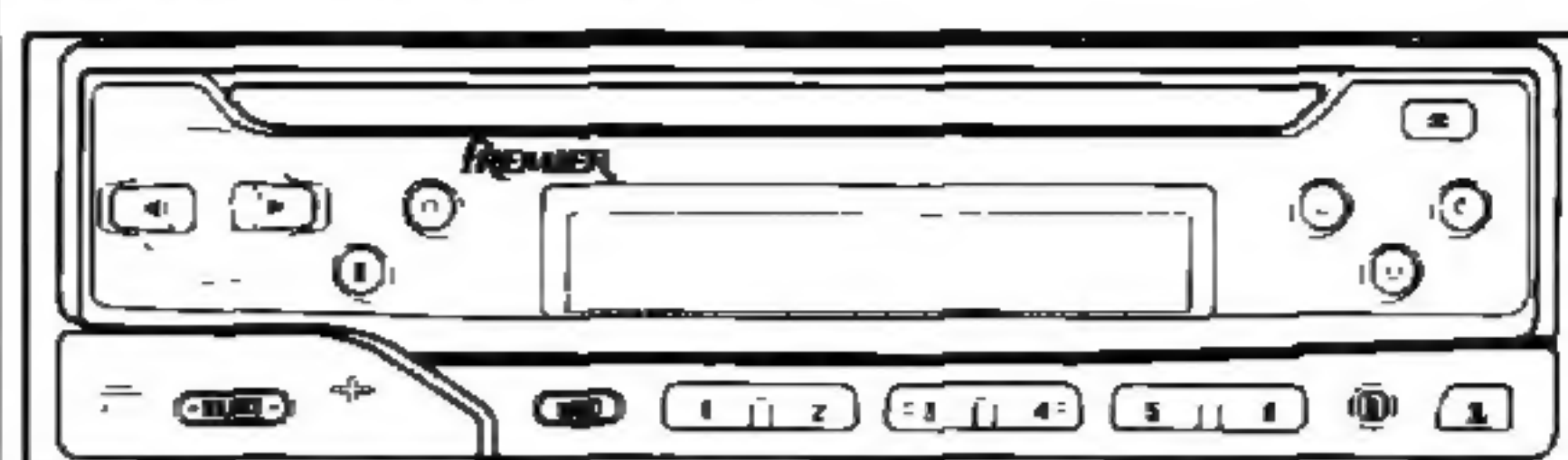


Service Manual

PIONEER
The Art of Entertainment

DEH-48/X1M/UC



ORDER NO.
CRT1966

HIGH POWER CD PLAYER WITH FM/AM TUNER

DEH-48

X1M/UC

DEH-435 **X1M/UC**

DEH-43 **X1M/UC**

DEH-436 **X1M/ES**

DEH-235 **X1M/UC**

DEH-236 **X1M/ES**

COMPACT
disc
DIGITAL AUDIO

- See the separate manual CX-597(CRT1829) for the CD mechanism description, disassembly and circuit description.
- The CD mechanism employed in this model is one of CX-597 series.

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K-FFD. JAN. 1997 Printed in Japan

● **CD Player Service Precautions**

1. For pickup unit(CXX1230) handling, please refer to "Disassembly"(CX-597 Service Manual CRT1829).
During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
3. Please checking the grating after changing the pickup unit(see page 63).

1. SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING

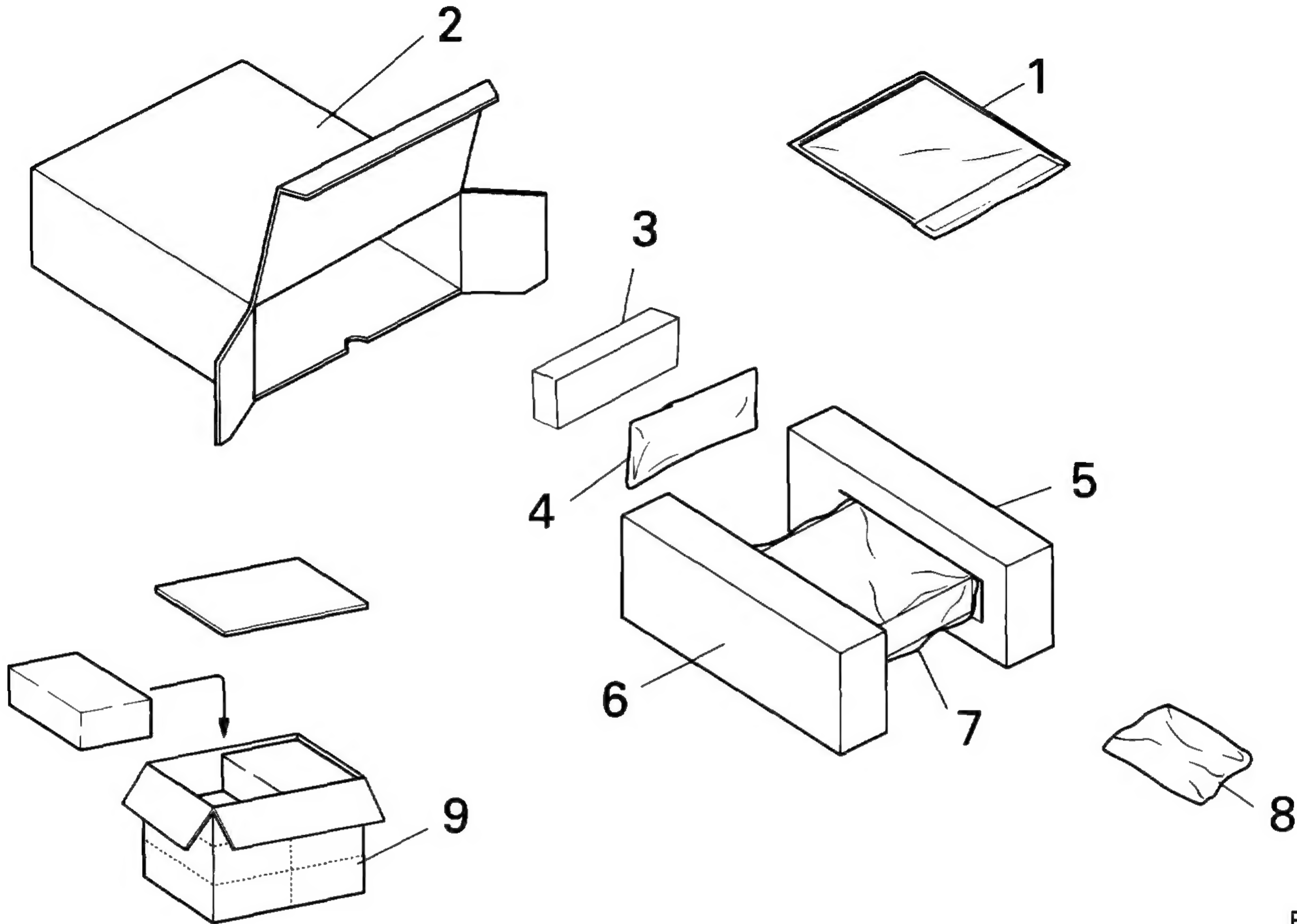


Fig. 1

NOTE:

- Parts marked by “*” are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ▼ mark on the product are used for disassembly.

● Parts List

| Mark | No. | Symbol & Description | Part No. | | | | | |
|------|-----|----------------------|---------------|----------------|---------------|----------------|----------------|----------------|
| | | | DEH-48/X1M/UC | DEH-435/X1M/UC | DEH-43/X1M/UC | DEH-436/X1M/ES | DEH-235/X1M/UC | DEH-236/X1M/ES |
| * | 1-1 | Owner's Manual | CRD2233 | CRD2235 | CRD2235 | CRD2242 | CRD2237 | CRD2244 |
| | 1-2 | Installation Manual | CRD2234 | CRD2236 | CRD2236 | CRD2243 | CRD2236 | CRD2243 |
| | 1-3 | Polyethylene Bag | CEG1116 | CEG1116 | CEG1116 | CEG1116 | CEG1116 | CEG1116 |
| | 1-4 | Warranty Card | CRY1070 | Not used | Not used | Not used | Not used | Not used |
| | 1-5 | Card | Not used | ARY1048 | ARY1048 | Not used | ARY1048 | Not used |
| | 2 | Carton | CHG3257 | CHG3258 | CHG3259 | CHG3262 | CHG3264 | CHG3265 |
| | 3 | Case Assy | CXB1063 | CXB1063 | CXB1063 | CXB1063 | Not used | Not used |
| | 4 | Cord | CDE4867 | CDE4867 | CDE4867 | CDE4867 | CDE4867 | CDE4867 |
| | 5 | Protector | CHP1769 | CHP1769 | CHP1769 | CHP1769 | CHP1769 | CHP1769 |
| | 6 | Protector | CHP1768 | CHP1768 | CHP1768 | CHP1768 | CHP1768 | CHP1768 |
| | 7 | Polyethylene Bag | CEG1173 | CEG1173 | CEG1173 | CEG-162 | CEG1173 | CEG-162 |
| | 8 | Accessory Assy | CEA1918 | CEA1918 | CEA1918 | CEA2002 | CEA1918 | CEA2002 |
| | 9 | Contain Box | CHL3257 | CHL3258 | CHL3259 | CHL3262 | CHL3264 | CHL3265 |

● Owner’s Manual

| Model | Part No. | Language |
|-------------------------------|----------|----------------------------------|
| DEH-48/X1M/UC | CRD2233 | English, French |
| DEH-43/X1M/UC, DEH-435/X1M/UC | CRD2235 | English, French, Spanish |
| DEH-436/X1M/ES | CRD2242 | English, French, Spanish, Arabic |
| DEH-235/X1M/UC | CRD2237 | English, French, Spanish |
| DEH-236/X1M/ES | CRD2244 | English, French, Spanish, Arabic |

● Installation Manual

| Model | Part No. | Language |
|-------------------------------|----------|----------------------------------|
| DEH-48/X1M/UC | CRD2234 | English, French |
| DEH-43/X1M/UC, DEH-435/X1M/UC | CRD2236 | English, French, Spanish |
| DEH-436/X1M/ES | CRD2243 | English, French, Spanish, Arabic |
| DEH-235/X1M/UC | CRD2236 | English, French, Spanish |
| DEH-236/X1M/ES | CRD2243 | English, French, Spanish, Arabic |

● Accessory Assy

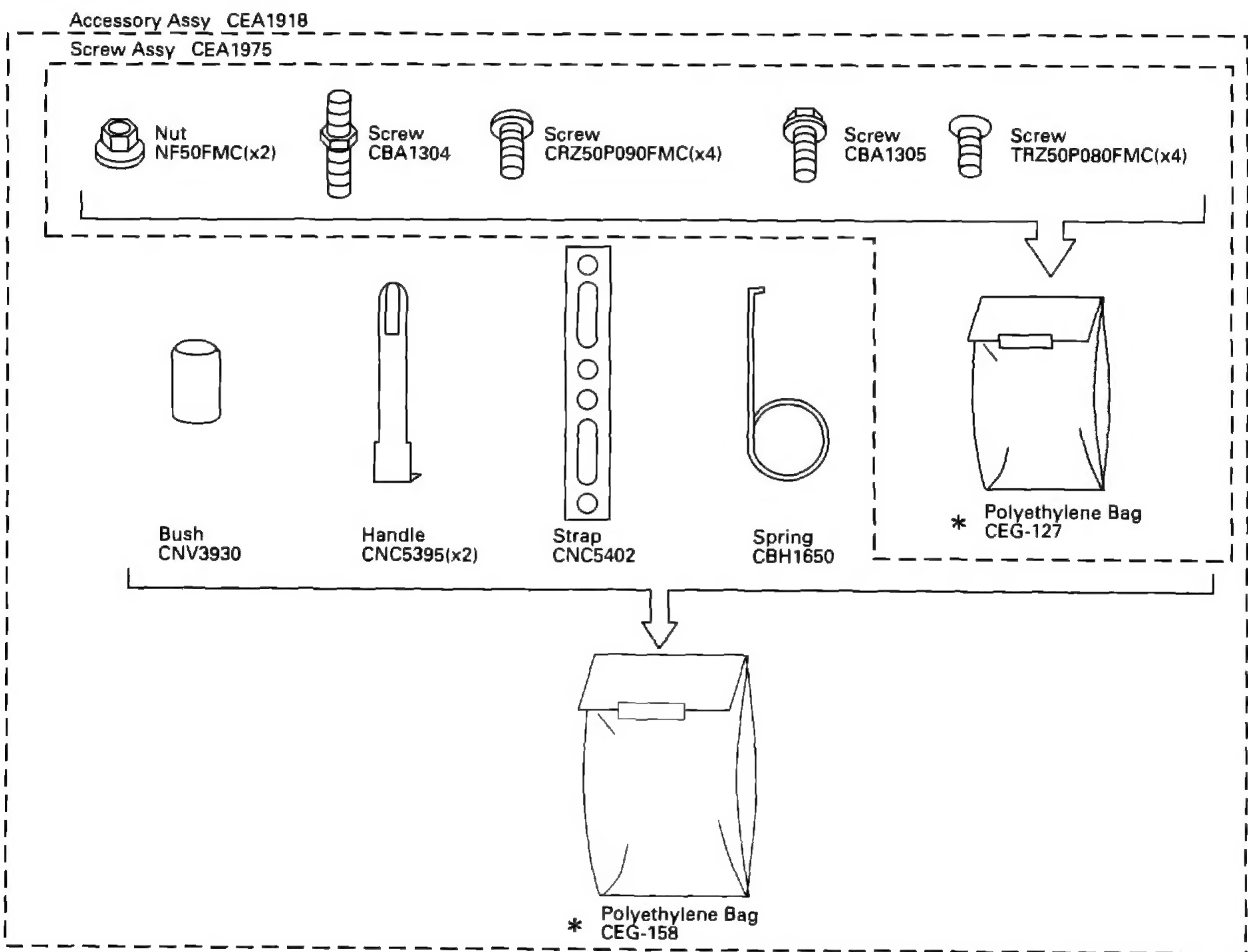


Fig. 2

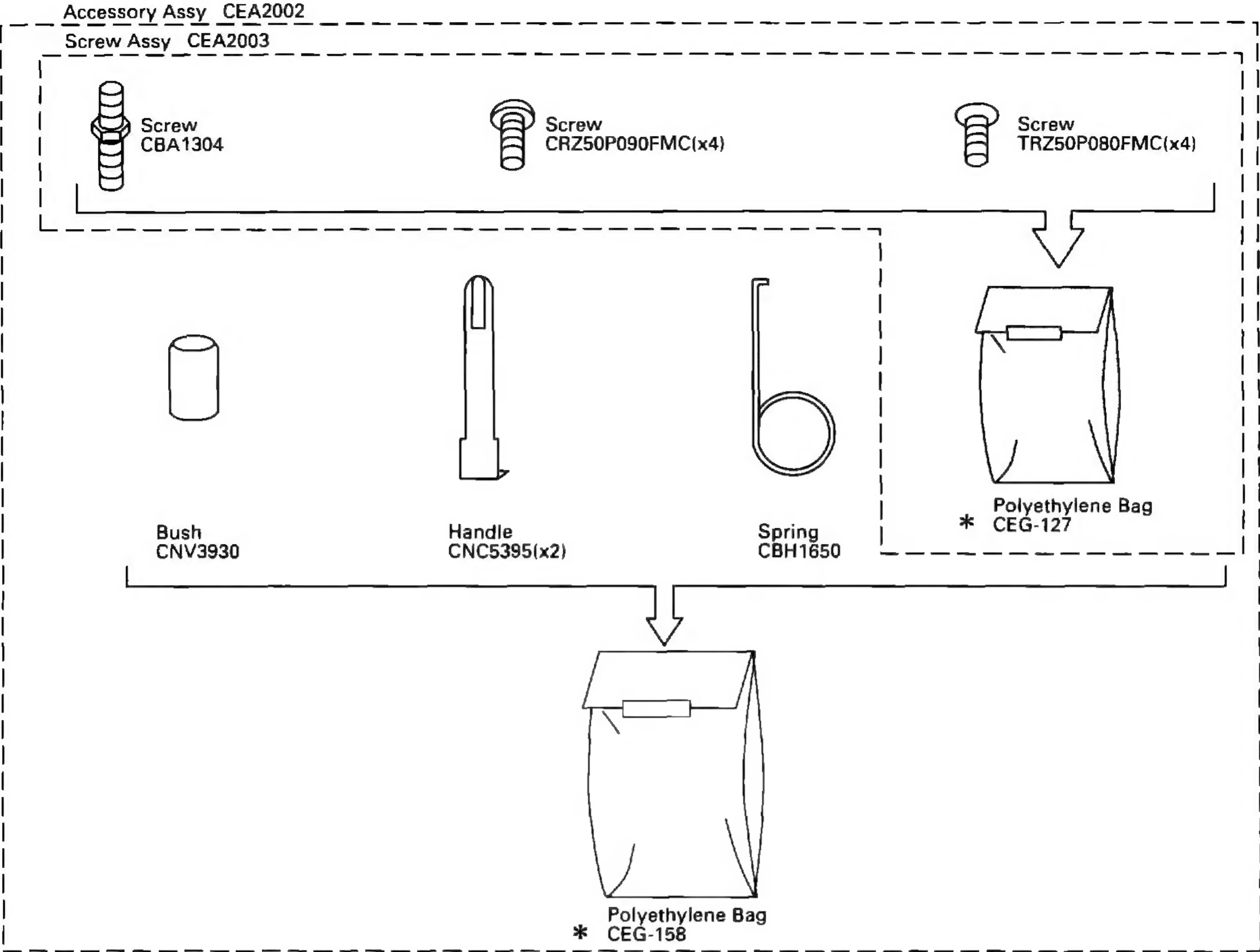


Fig. 3

2.2 CD MECHANISM MODULE

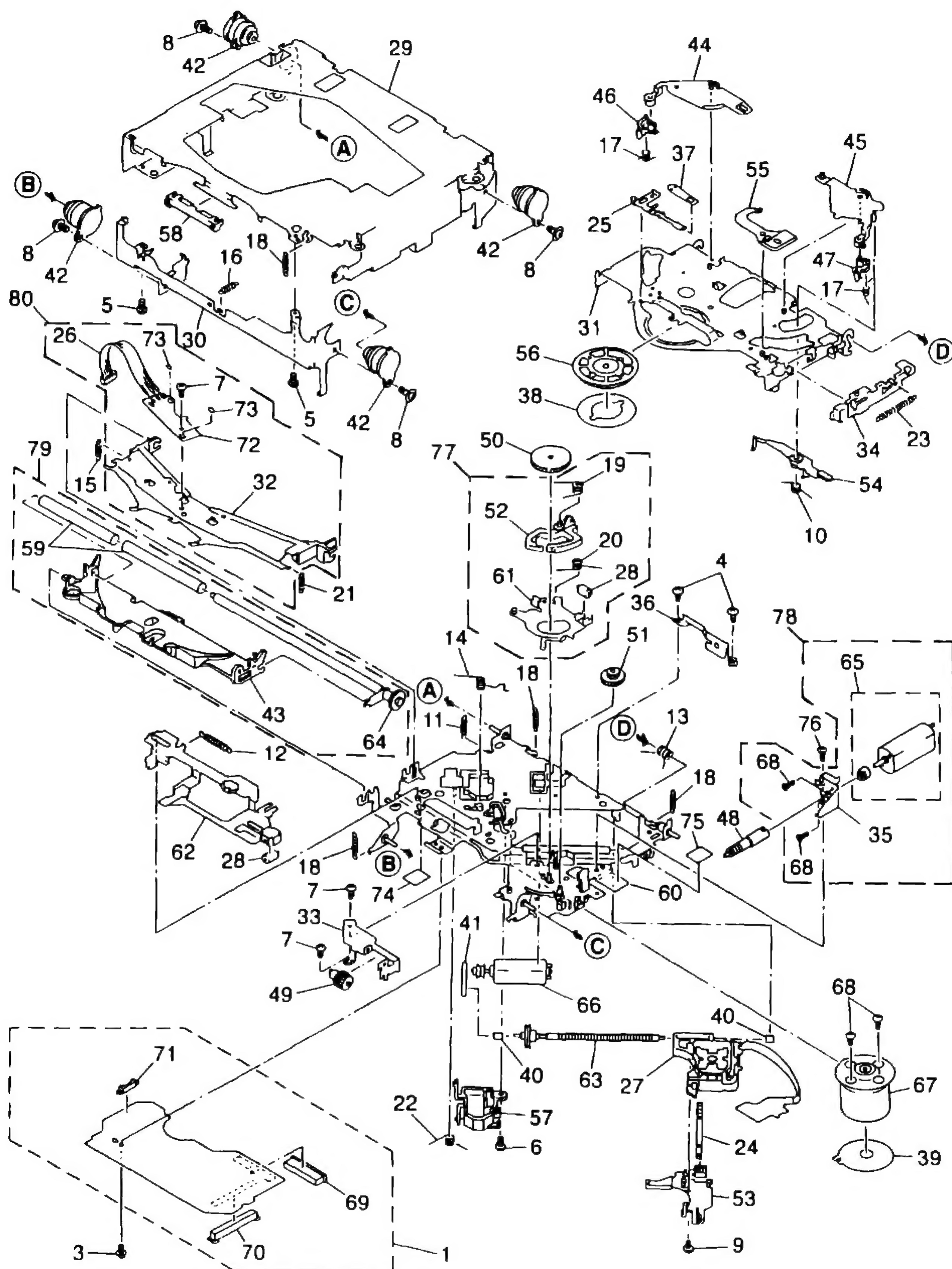


Fig. 4

● Parts List

| Mark No. | Description | Part No. | Mark No. | Description | Part No. |
|----------|----------------------|--------------|----------|-------------------------|--------------|
| 1 | Control Unit | CWX1889 | 46 | Arm | CNV4124 |
| 2 | ..... |  | 47 | Arm | CNV4125 |
| 3 | Screw | IMS26P035FMC | 48 | Gear | CNV4128 |
| 4 | Screw | BMZ20P040FMC | 49 | Gear | CNV4129 |
| 5 | Screw | BSZ20P040FMC | 50 | Gear | CNV4130 |
| 6 | Screw(M2×3) | CBA1077 | 51 | Gear | CNV4131 |
| 7 | Screw(M2×2) | CBA1250 | 52 | Arm | CNV4136 |
| 8 | Screw(M2×5) | CBA1296 | 53 | Holder | CNV4663 |
| 9 | Screw(M2×3.85) | CBA1362 | 54 | Arm | CNV4138 |
| 10 | Spring | CBH1916 | 55 | Arm | CNV4139 |
| 11 | Spring | CBH1724 | 56 | Clamper | CNV4712 |
| 12 | Spring | CBH1939 | 57 | Holder | CNV4664 |
| 13 | Spring | CBH1729 | 58 | Guide | CNV4484 |
| 14 | Spring | CBH1730 | 59 | Roller | CNV4509 |
| 15 | Spring | CBH1731 | 60 | Chassis Unit | CXA8561 |
| 16 | Spring | CBH1732 | 61 | Arm Unit | CXA8565 |
| 17 | Spring | CBH1736 | 62 | Lever Unit | CXA9300 |
| 18 | Spring | CBH1745 | 63 | Screw Unit | CXA9388 |
| 19 | Spring | CBH1832 | 64 | Gear Unit | CXA9389 |
| 20 | Spring | CBH1833 | 65 | Load Motor Unit(M3) | CXA9391 |
| 21 | Spring | CBH1848 | 66 | CRG Motor Unit(M2) | CXA9392 |
| 22 | Spring | CBH1849 | 67 | Motor Unit(M1) | CXA9407 |
| 23 | Spring | CBH1863 | 68 | Screw | JFZ20P025FMC |
| 24 | Spring | CBL1214 | 69 | Connector(CN101) | CKS1953 |
| 25 | Spring | CBL1269 | 70 | Connector(CN701) | CKS2774 |
| 26 | Connector(CN1) | CDE4576 | 71 | Connector(CN801) | CKS2196 |
| 27 | Pickup Unit(Service) | CXX1230 | * 72 | Gathering PCB | CNX2445 |
| 28 | Roller | CLA2627 | 73 | Photo-transistor(Q1, 2) | CPT-230S-X |
| 29 | Frame | CNC5796 | 74 | Sheet | CNM4873 |
| 30 | Frame | CNC5797 | 75 | Cushion | CNM3917 |
| 31 | Arm | CNC5799 | 76 | Screw | BMZ20P025FMC |
| 32 | Arm | CNC5801 | 77 | ..... |  |
| 33 | Bracket | CNC5871 | 78 | ..... |  |
| 34 | Lever | CNC6054 | 79 | ..... |  |
| 35 | Bracket | CNC6056 | 80 | ..... |  |
| * 36 | Bracket | CNC6376 | | | |
| 37 | Spacer | CNM3315 | | | |
| 38 | Sheet | CNM4849 | | | |
| 39 | PCB | CNP4230 | | | |
| 40 | Bearing | CNR1415 | | | |
| 41 | Belt | CNT1071 | | | |
| 42 | Damper | CNV3974 | | | |
| 43 | Arm | CNV4120 | | | |
| 44 | Arm | CNV4122 | | | |
| 45 | Arm | CNV4123 | | | |

● Parts List

| Mark No. | Description | Part No. |
|----------|------------------------------------|--------------|
| 1 | Screw | BSZ26P050FMC |
| 2 | Screw | ASZ26P080FMC |
| 3 | Screw | BSZ30P050FMC |
| 4 | Screw | BSZ30P060FMC |
| 5 | Screw | BSZ30P160FMC |
| 6 | Cord | CDE4867 |
| 7 | Cap | CNS1472 |
| 8 | Resistor | RS1/2PMF102J |
| 9 | Cable | CDE4869 |
| 10 | Spring | CBH1650 |
| 11 | Handle | CNC5395 |
| 12 | Bush | CNV3930 |
| 13 | Case | CNB1989 |
| 14 | Holder | CNC6469 |
| 15 | Holder | CNC6798 |
| 16 | Insulator | CNM5067 |
| 17 | Insulator | CNM4811 |
| 18 | Cushion | CNM5210 |
| 19 | Panel | CNS4200 |
| 20 | Cover | CNM4704 |
| 21 | Tuner Amp Unit (DEH-235/X1M/UC) | CWM4968 |
| | Tuner Amp Unit (DEH-236/X1M/ES) | CWM4969 |
| 22 | Screw | BPZ26P120FMC |
| 23 | Screw | BSZ26P120FMC |
| 24 | Plug(CN951) | CKM1225 |
| 25 | Connector(CN681) | CKS2228 |
| 26 | Connector(CN421) | CKS3357 |
| 27 | Connector(CN651) | CKS3581 |
| 28 | Antenna Jack(CN501) | CKX1056 |
| 29 | Holder | CNC5399 |
| 30 | Bracket | CNC6130 |
| 31 | Holder | CNC6131 |
| 32 | Holder | CNC6132 |

| Mark No. | Description | Part No. |
|----------|--------------------------------------|--------------|
| 33 | Heat Sink | CNR1407 |
| 34 | FM/AM Tuner Unit (DEH-235/X1M/UC) | CWE1417 |
| | FM/AM Tuner Unit (DEH-236/X1M/ES) | CWE1485 |
| 35 | Holder | CNC6555 |
| 36 | Screw | BPZ20P100FZK |
| 37 | Button(S.SEEK) | CAC4900 |
| 38 | Button(LOC.CLOCK) | CAC4901 |
| 39 | Button(EJECT) | CAC5248 |
| 40 | Button(- +) | CAC4903 |
| 41 | Button(SOURCE) | CAC4904 |
| 42 | Button(1-6) | CAC4905 |
| 43 | Button(BSM) | CAC4906 |
| 44 | Button(BAND) | CAC4907 |
| 45 | Fuse(10A) | CEK1136 |
| 46 | Cushion | CNM5156 |
| 47 | Grille Unit (DEH-235/X1M/UC) | CXB1469 |
| | Grille Unit (DEH-236/X1M/ES) | CXB1470 |
| 48 | Screw | CBA1304 |
| 49 | Holder | CNV4778 |
| 50 | Keyboard Unit | CWM5203 |
| 51 | LCD(LCD901) | CAW1330 |
| 52 | Connector(CN901) | CKS3580 |
| 53 | Holder | CNC6873 |
| 54 | Connector | CNV4449 |
| 55 | Rubber | CNV4766 |
| 56 | Lighting Conductor | CNV4777 |
| 57 | Chassis Unit | CXA9729 |
| 58 | CD Mechanism Module(S7) | CXK4201 |
| 59 | Screw | BSZ30P055FUC |
| 60 | Transistor(Q981,991) | 2SD2396 |
| 61 | IC(IC551) | TDA7384A |
| 62 | Cushion | CNM5271 |

2.4 EXTERIOR (EXCEPT FOR DEH-235/X1M/UC, DEH-236/X1M/ES)

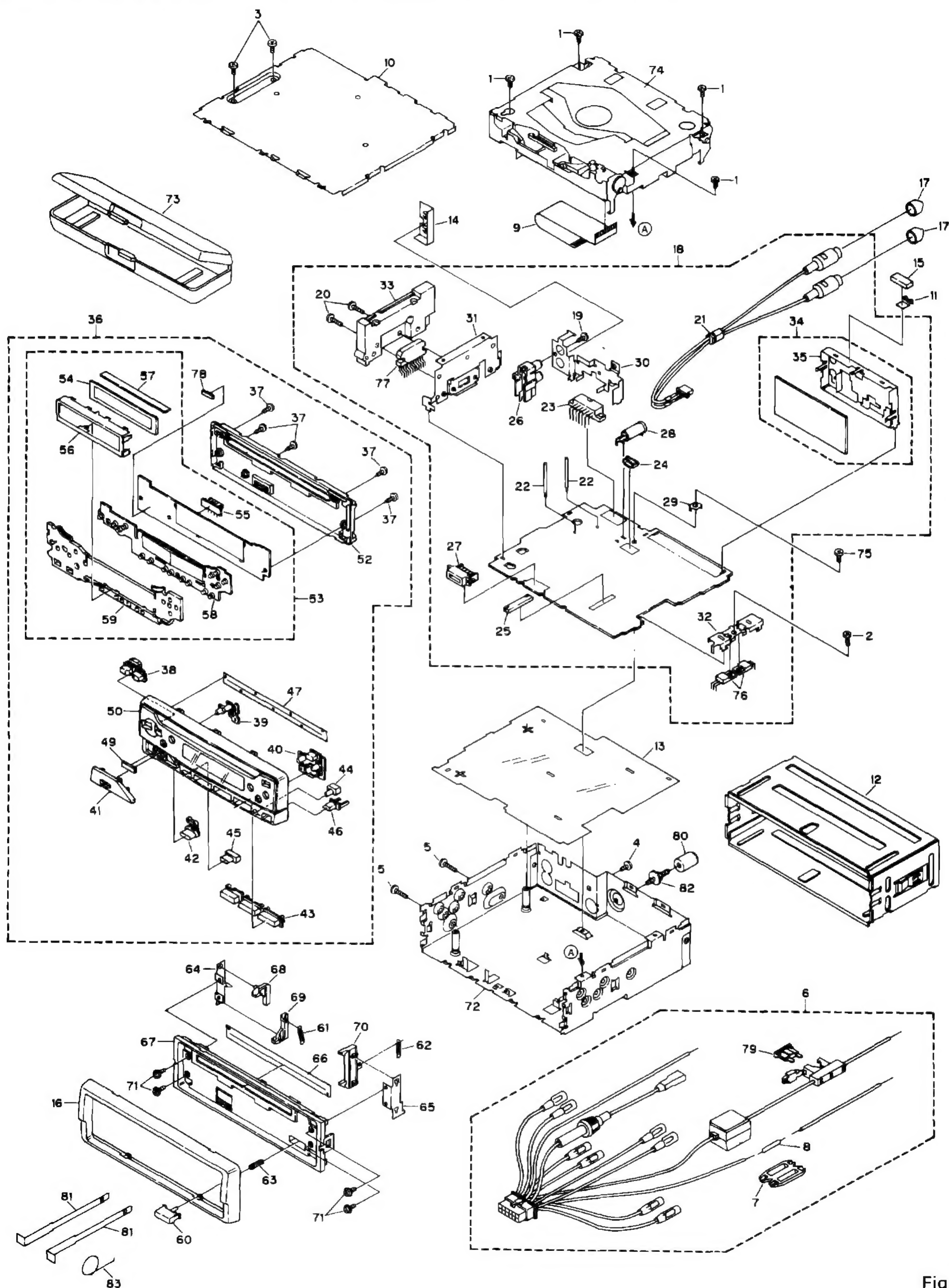


Fig. 6

(1)PARTS LIST

| Mark No. | Description | Part No. |
|----------|---------------------|-----------------------|
| 1 | Screw | BSZ26P050FMC |
| 2 | Screw | ASZ26P080FMC |
| 3 | Screw | BSZ30P050FMC |
| 4 | Screw | BSZ30P060FMC |
| 5 | Screw | BSZ30P160FMC |
| 6 | Cord | CDE4867 |
| 7 | Cap | CNS1472 |
| 8 | Resistor | RS1/2PMF102J |
| 9 | Cable | CDE4869 |
| 10 | Case | CNB1989 |
| 11 | Holder | CNC6469 |
| 12 | Holder | CNC6798 |
| 13 | Insulator | CNM5067 |
| 14 | Insulator | CNM4811 |
| 15 | Cushion | CNM5210 |
| 16 | Panel | CNS4200 |
| 17 | Cap | See Contrast table(2) |
| 18 | Tuner Amp Unit | See Contrast table(2) |
| 19 | Screw | BPZ26P120FMC |
| 20 | Screw | BSZ26P120FMC |
| 21 | Cord | See Contrast table(2) |
| 22 | Clamper | See Contrast table(2) |
| 23 | Plug(CN951) | CKM1225 |
| 24 | Plug(CN422) | CKS1238 |
| 25 | Connector(CN681) | CKS2228 |
| 26 | Connector(CN421) | CKS3357 |
| 27 | Connector(CN651) | CKS3581 |
| 28 | Antenna Jack(CN501) | CKX1056 |
| 29 | Holder | CNC5399 |
| 30 | Bracket | CNC6130 |
| 31 | Holder | CNC6131 |
| 32 | Holder | CNC6132 |
| 33 | Heat Sink | CNR1407 |
| 34 | FM/AM Tuner Unit | See Contrast table(2) |
| 35 | Holder | CNC6555 |
| 36 | Detach Grille Assy | See Contrast table(2) |
| 37 | Screw | BPZ20P100FZK |
| 38 | Button(S.SEEK) | CAC4900 |
| 39 | Button(LOC.CLOCK) | CAC4901 |
| 40 | Button(EJECT) | CAC5248 |
| 41 | Button(- +) | CAC4903 |
| 42 | Button(SOURCE) | CAC4904 |
| 43 | Button(1-6) | CAC4905 |
| 44 | Button(BSM) | CAC4906 |
| 45 | Button(BAND) | CAC4907 |

| Mark No. | Description | Part No. |
|----------|-------------------------|-----------------------|
| 46 | Button(DETACH) | CAC4908 |
| 47 | Cover | CNM4704 |
| 48 | ..... |  |
| 49 | Cushion | CNM5156 |
| 50 | Grille Unit | See Contrast table(2) |
| 51 | ..... |  |
| 52 | Cover | CNS4203 |
| 53 | Keyboard Unit | CWM4973 |
| 54 | LCD(LCD901) | CAW1330 |
| 55 | Connector(CN901) | CKS3580 |
| 56 | Holder | CNC6873 |
| 57 | Connector | CNV4449 |
| 58 | Rubber | CNV4766 |
| 59 | Lighting Conductor | CNV4777 |
| 60 | Button | CAC4836 |
| 61 | Spring | CBH1834 |
| 62 | Spring | CBH1835 |
| 63 | Spring | CBH1933 |
| 64 | Bracket | CNC6135 |
| 65 | Bracket | CNC6791 |
| 66 | Cover | CNM4875 |
| 67 | Panel | CNS4209 |
| 68 | Arm | CNV4692 |
| 69 | Arm | CNV4693 |
| 70 | Arm | CNV4728 |
| 71 | Screw | IMS20P030FZK |
| 72 | Chassis Unit | See Contrast table(2) |
| 73 | Case Assy | CXB1063 |
| 74 | CD Mechanism Module(S7) | CXK4201 |
| 75 | Screw | BSZ30P055FUC |
| 76 | Transistor(Q981,991) | 2SD2396 |
| 77 | IC(IC551) | TDA7384A |
| 78 | Cushion | CNM5271 |
| 79 | Fuse(10A) | CEK1136 |
| 80 | Bush | CNV3930 |
| 81 | Handle | CNC5395 |
| 82 | Screw | CBA1304 |
| 83 | Spring | CBH1650 |

DEH-48,435,43,436,235,236

(2) CONTRAST TABLE

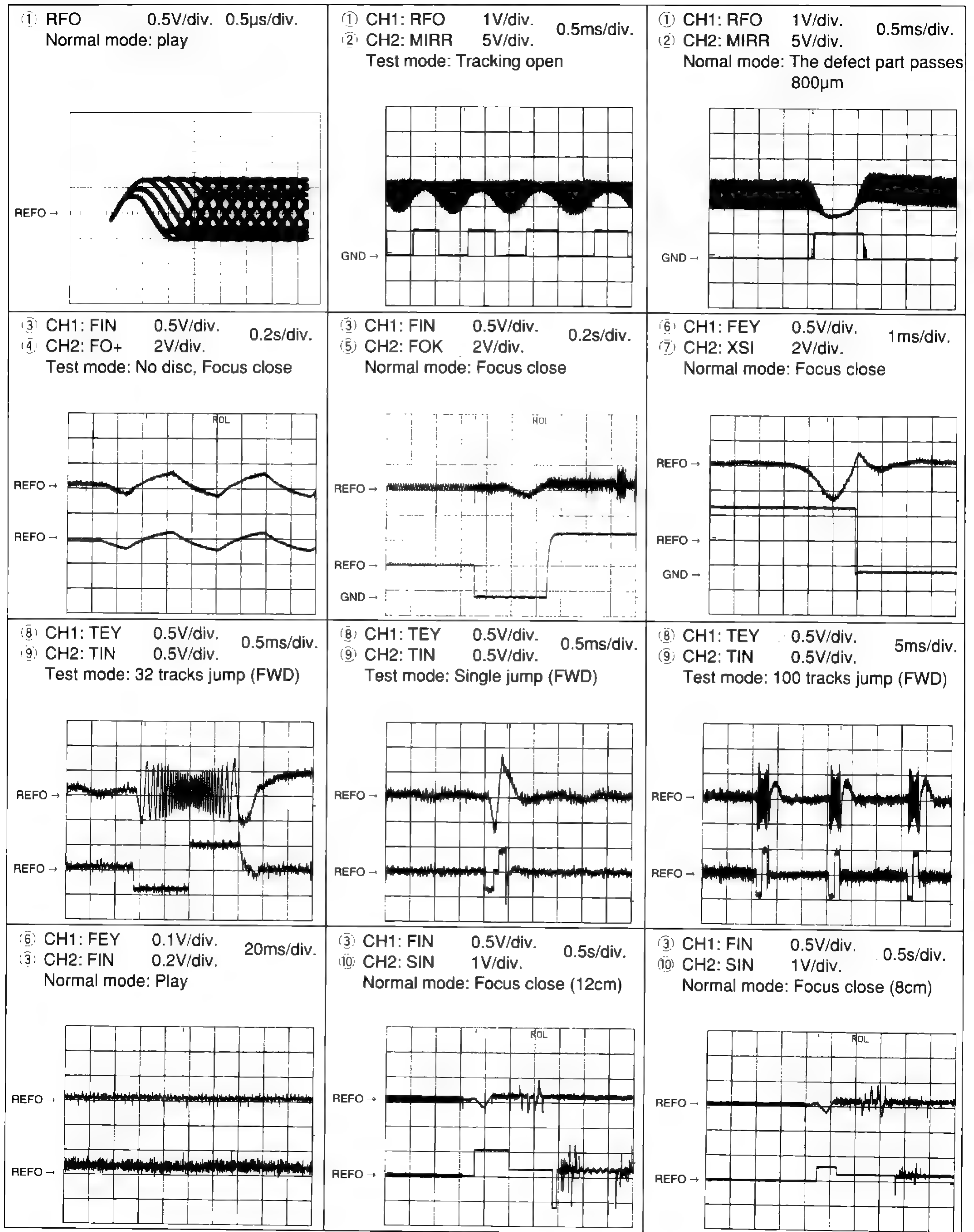
DEH-48/X1M/UC, DEH-435/X1M/UC, DEH-43/X1M/UC and DEH-436/X1M/ES have the same construction except for the following:

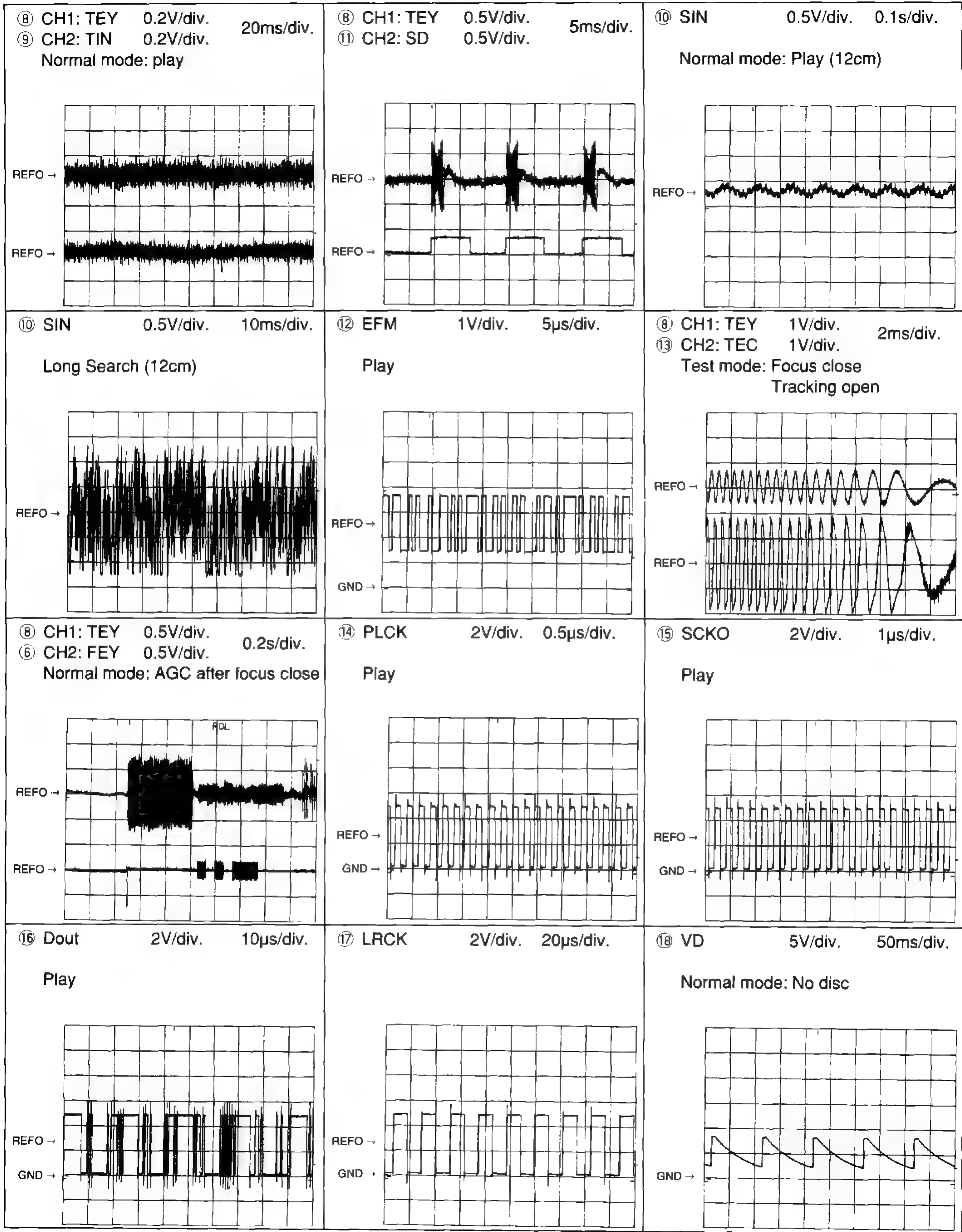
| Mark No. | Symbol & Description | Part No. | | | |
|----------|----------------------|---------------|----------------|---------------|----------------|
| | | DEH-48/X1M/UC | DEH-435/X1M/UC | DEH-43/X1M/UC | DEH-436/X1M/ES |
| 17 | Cap | CNV2680 | Not used | Not used | Not used |
| 18 | Tuner Amp Unit | CWM4964 | CWM4965 | CWM4966 | CWM4967 |
| 21 | Cord | CDE4770 | Not used | Not used | Not used |
| 22 | CImper | CEF1005 | Not used | Not used | Not used |
| 34 | FM/AM Tuner Unit | CWE1417 | CWE1417 | CWE1417 | CWE1485 |
| 36 | Detach Grille Assy | CXA9574 | CXA9575 | CXA9576 | CXA9577 |
| 50 | Grille Unit | CXB1465 | CXB1466 | CXB1467 | CXB1468 |
| 72 | Chassis Unit | CXA9687 | CXA9729 | CXA9729 | CXA9729 |

3. SCHEMATIC DIAGRAM

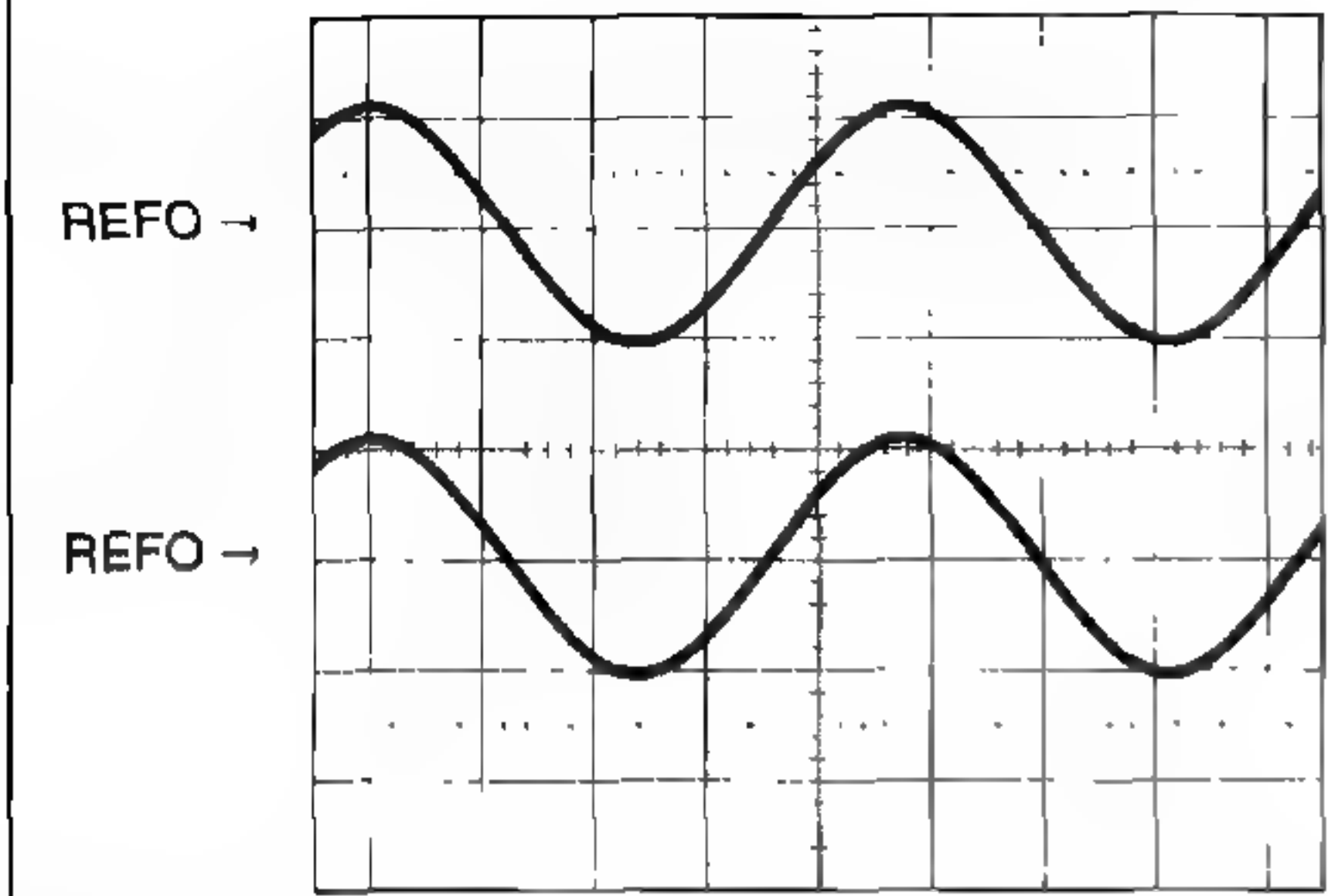
Note:1. The encircled numbers denote measuring pointes in the circuit diagram.
2. Reference voltage
REFO:2.5V

● Waveforms

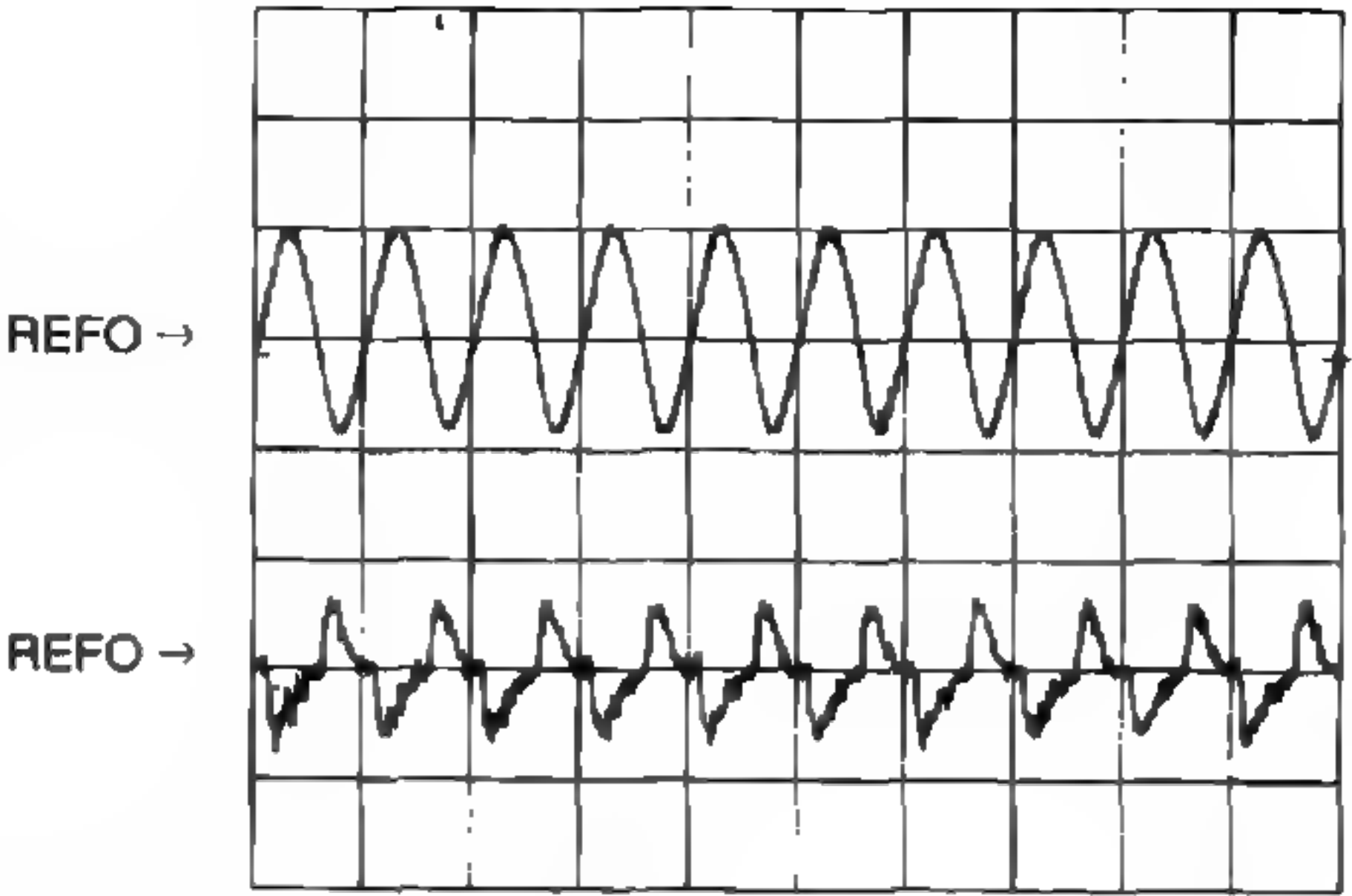




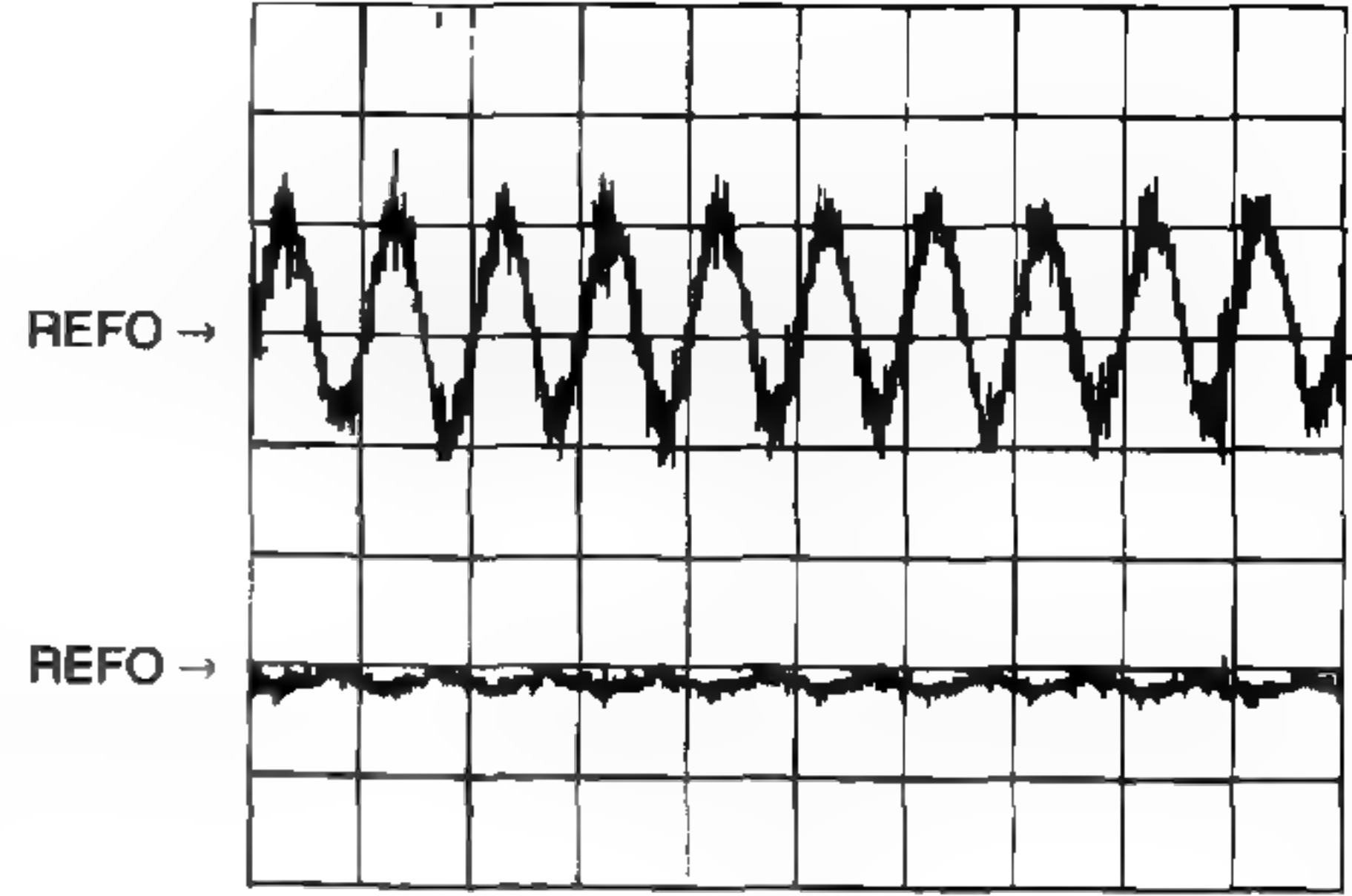
⑮ CH1: R OUT 1V/div. 0.2ms/div.
⑯ CH2: L OUT 1V/div.
Normal mode: Play (1kHz 0dB)



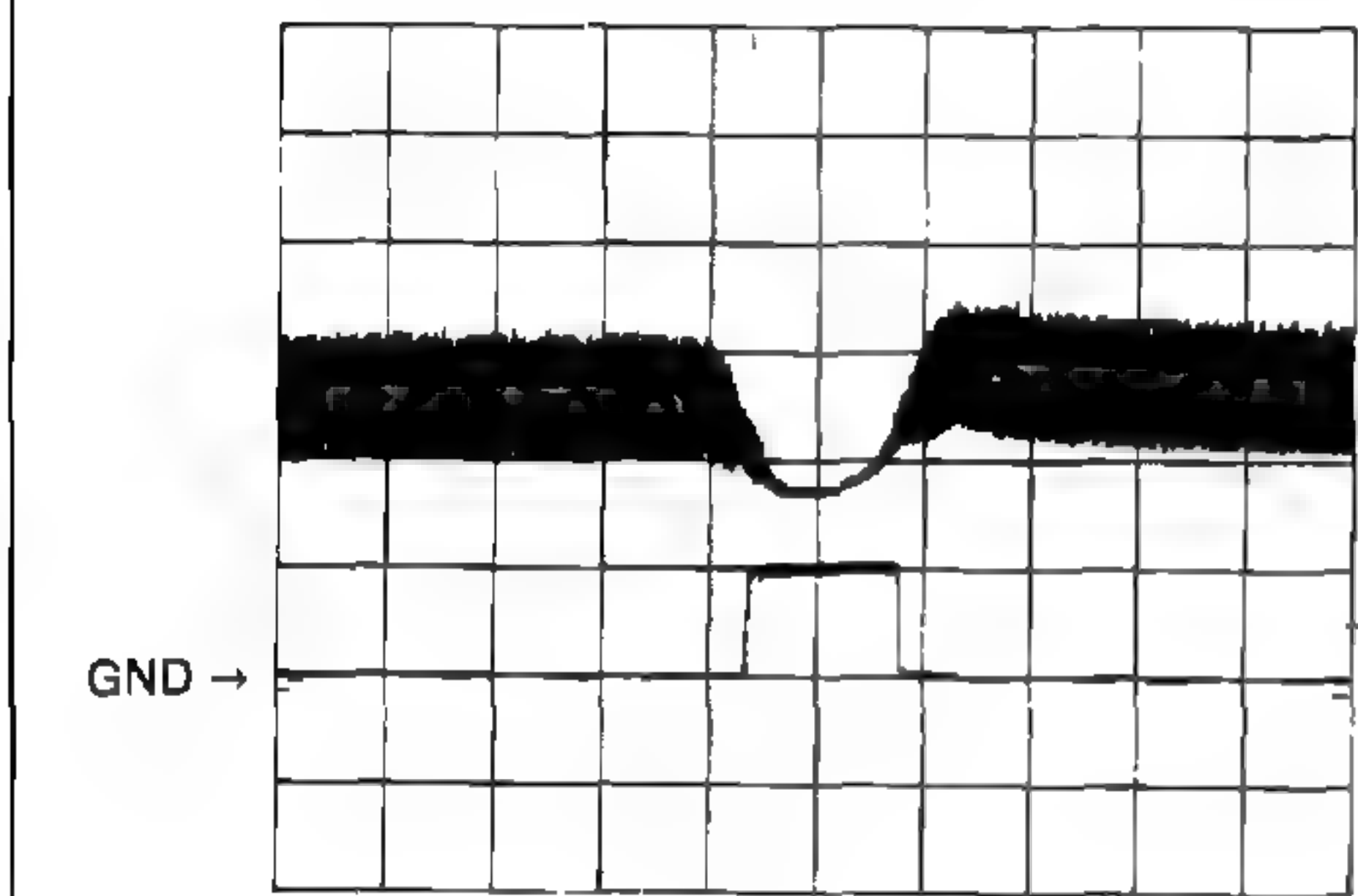
⑥ CH1: FEY 0.2V/div. 1ms/div.
③ CH2: FIN 0.5V/div.
Normal mode: During AGC



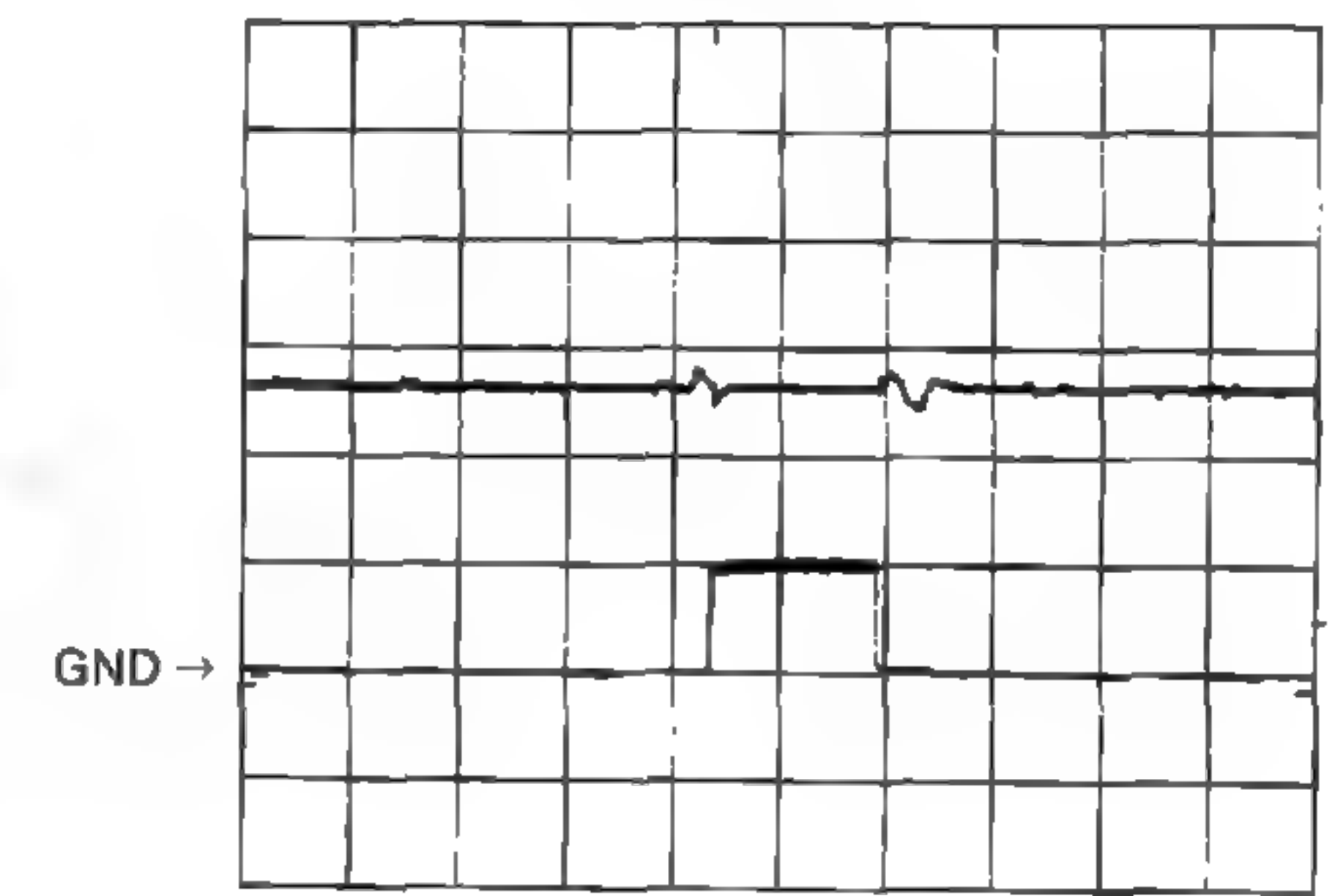
⑧ CH1: TEY 0.2V/div. 1ms/div.
⑨ CH2: TIN 0.5V/div.
Normal mode: During AGC



① CH1: RFO 1V/div. 0.5ms/div.
② CH2: HOLD 5V/div.
Normal mode: The defect part passes 800μm

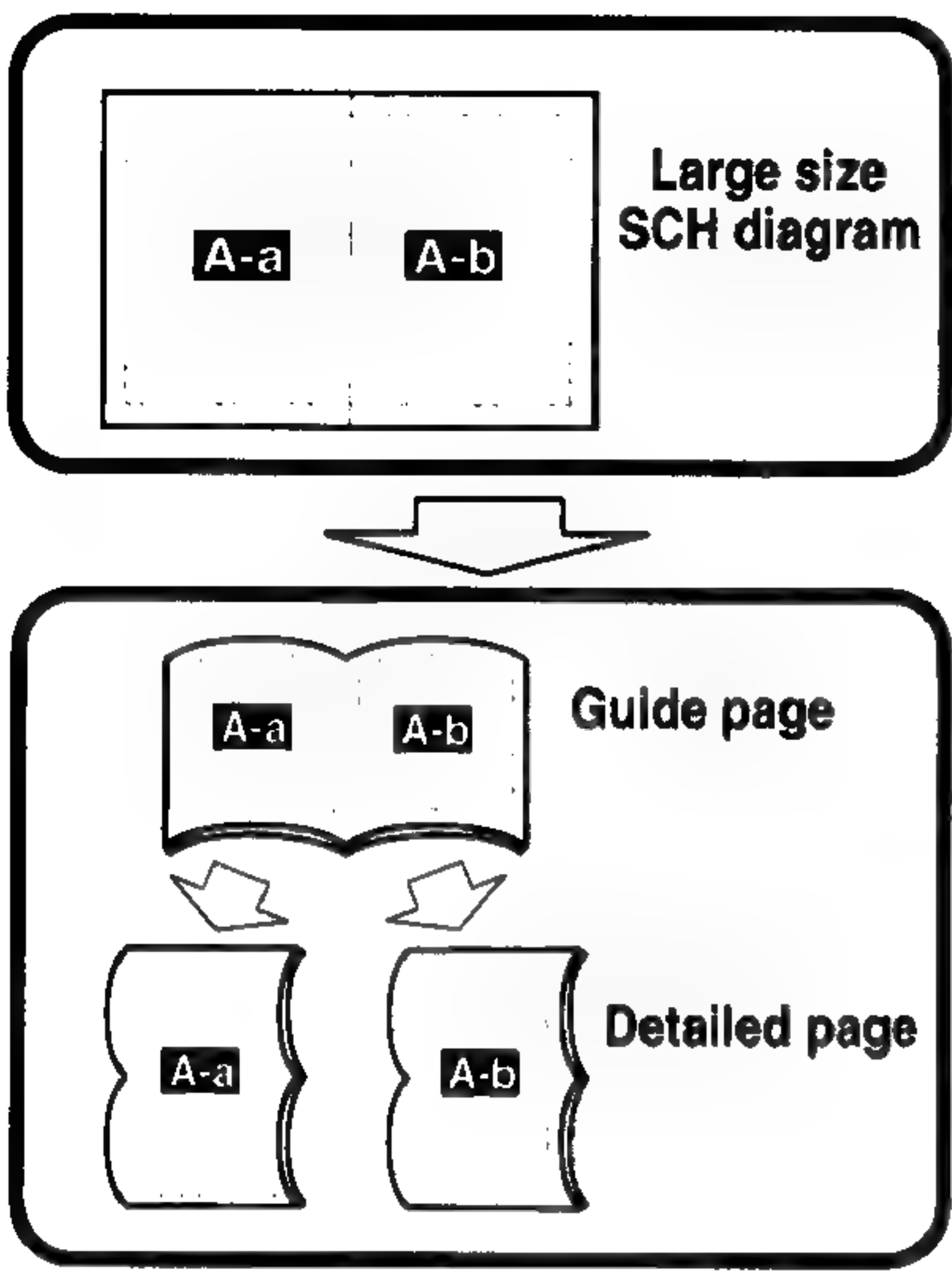


③ CH1: FIN 1V/div. 0.5ms/div.
④ CH2: HOLD 5V/div.
Normal mode: The defect part passes 800μm

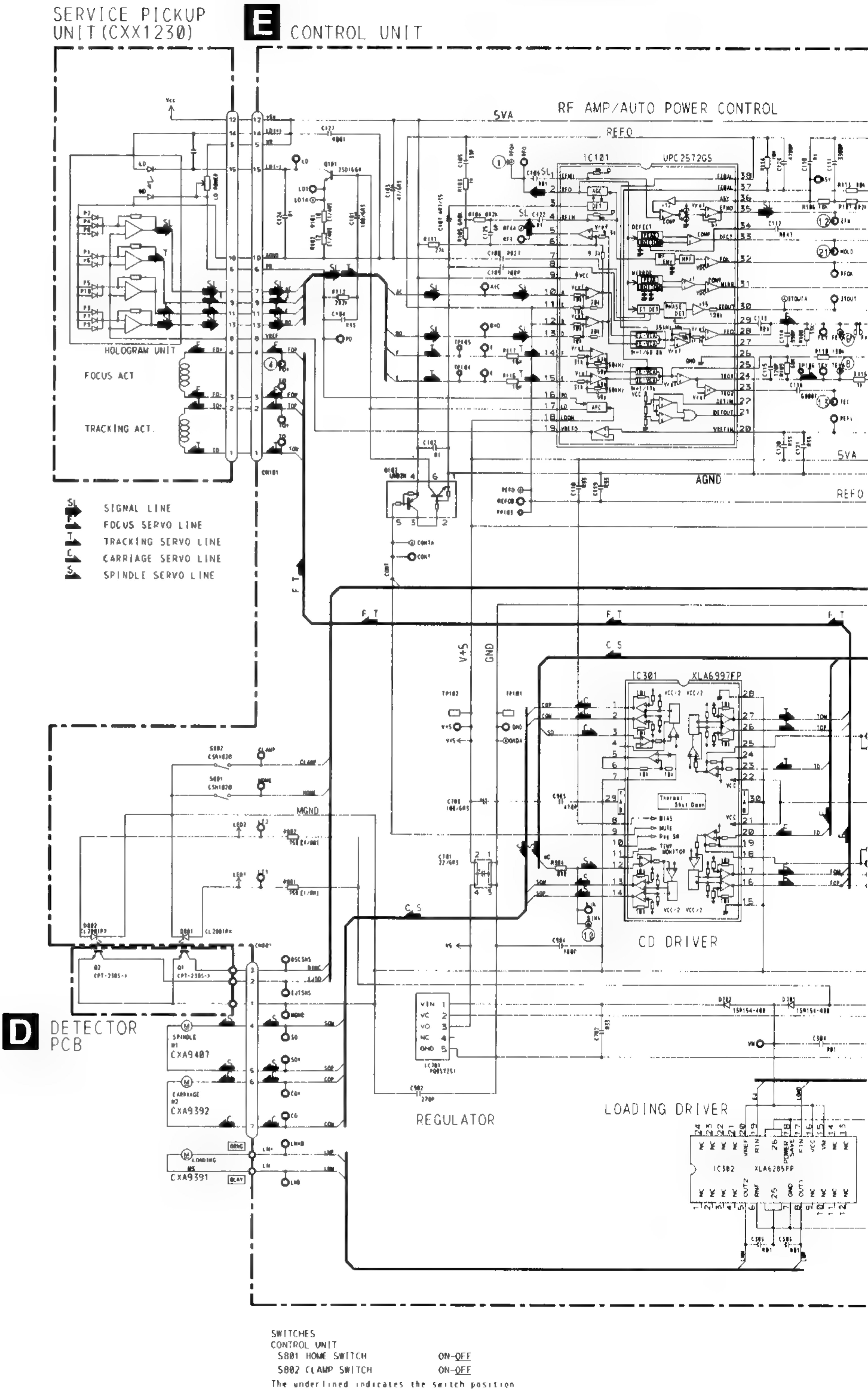


3.1 CD MECHANISM MODULE(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to “EXPLODED VIEWS AND PARTS LIST” or “ELECTRICAL PARTS LIST”.



E-a



E-b

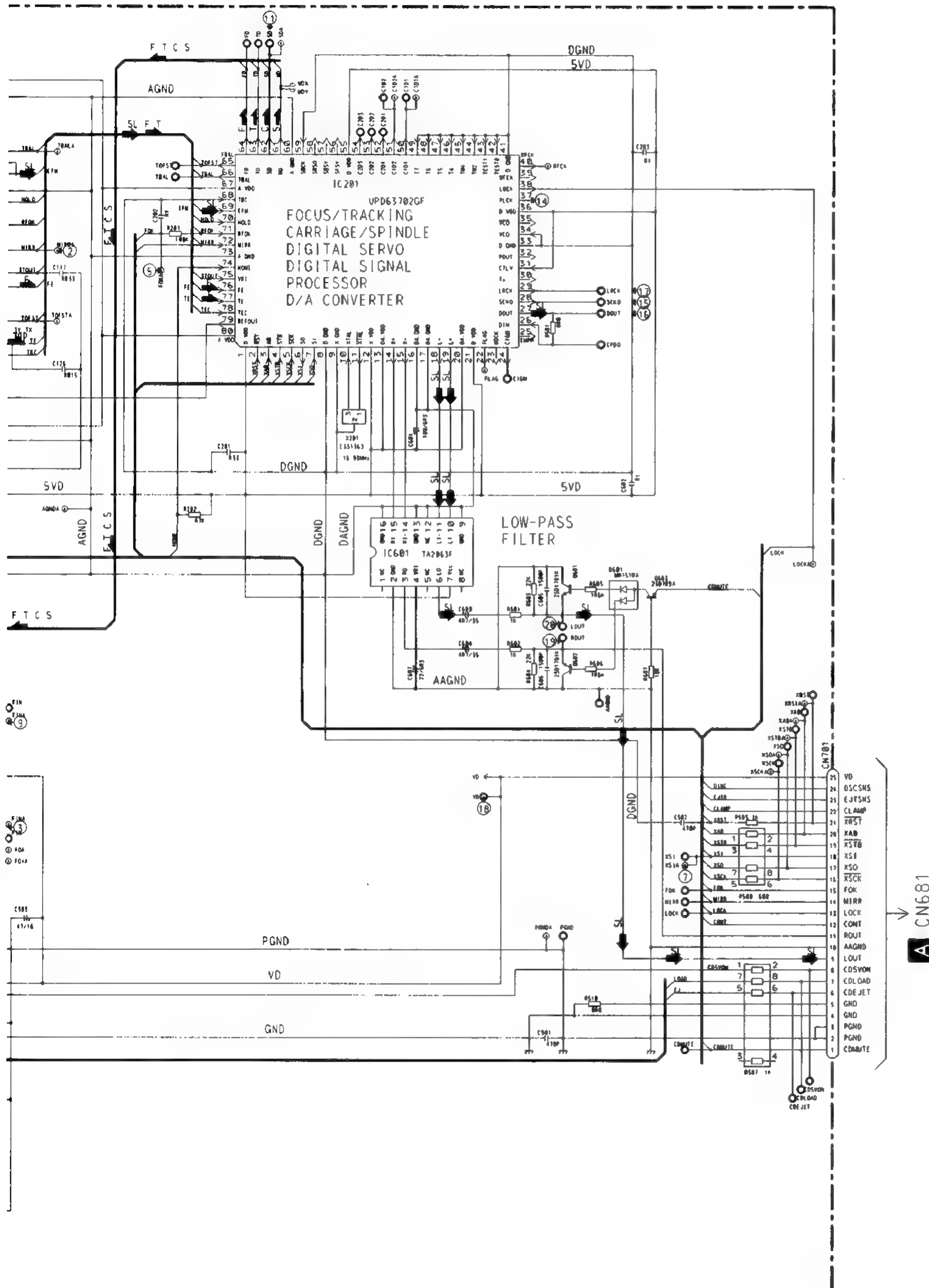
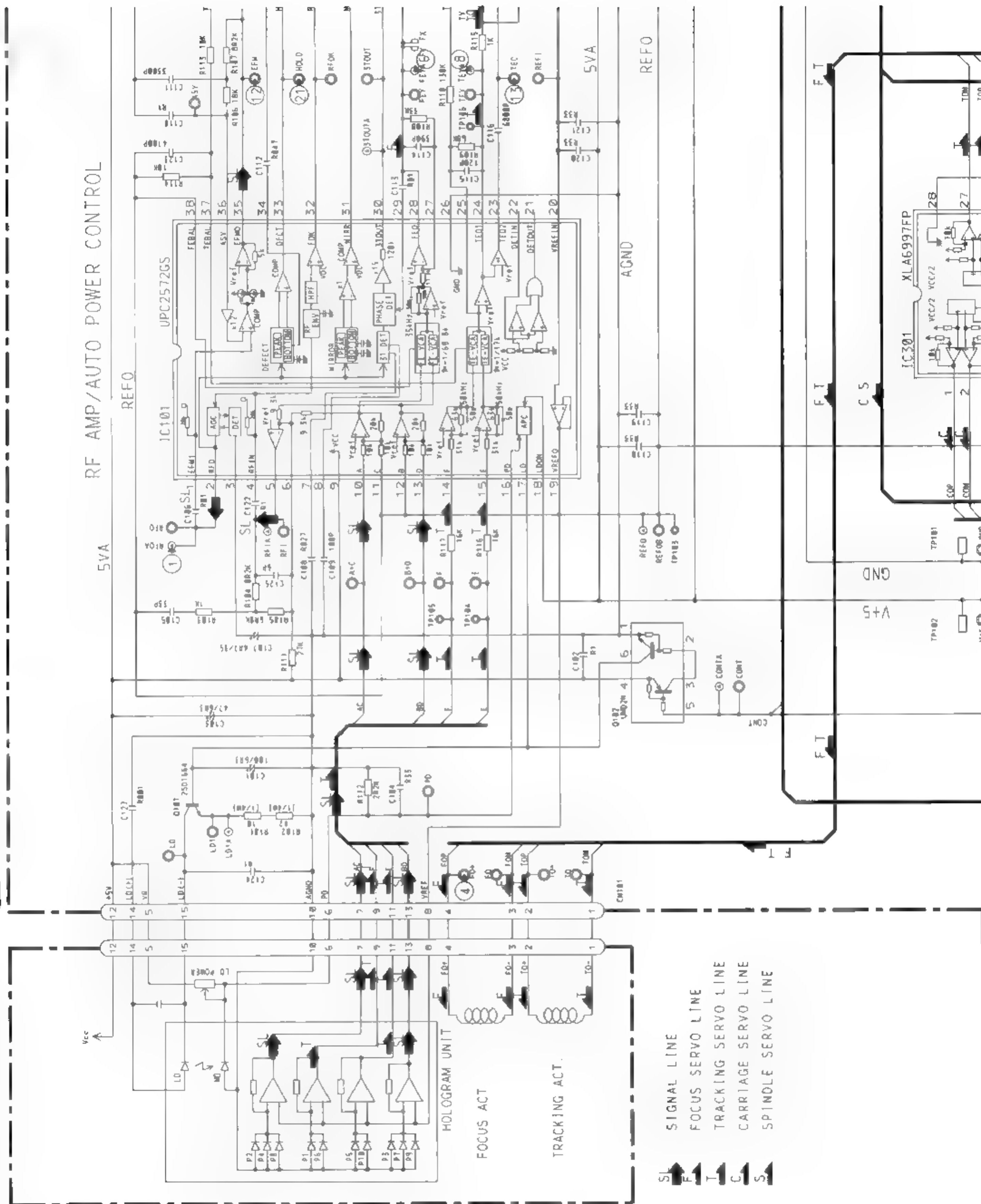
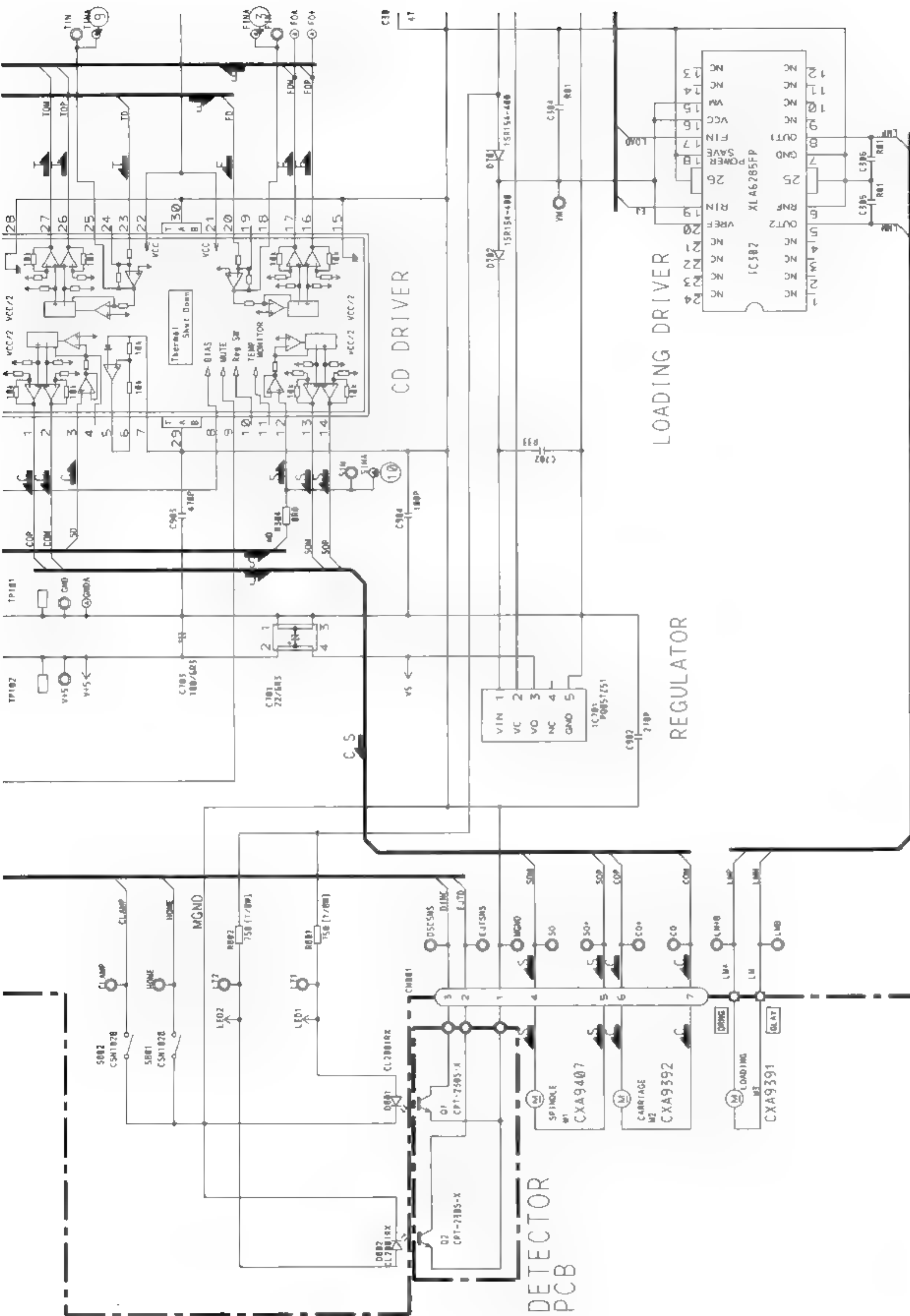


Fig. 7





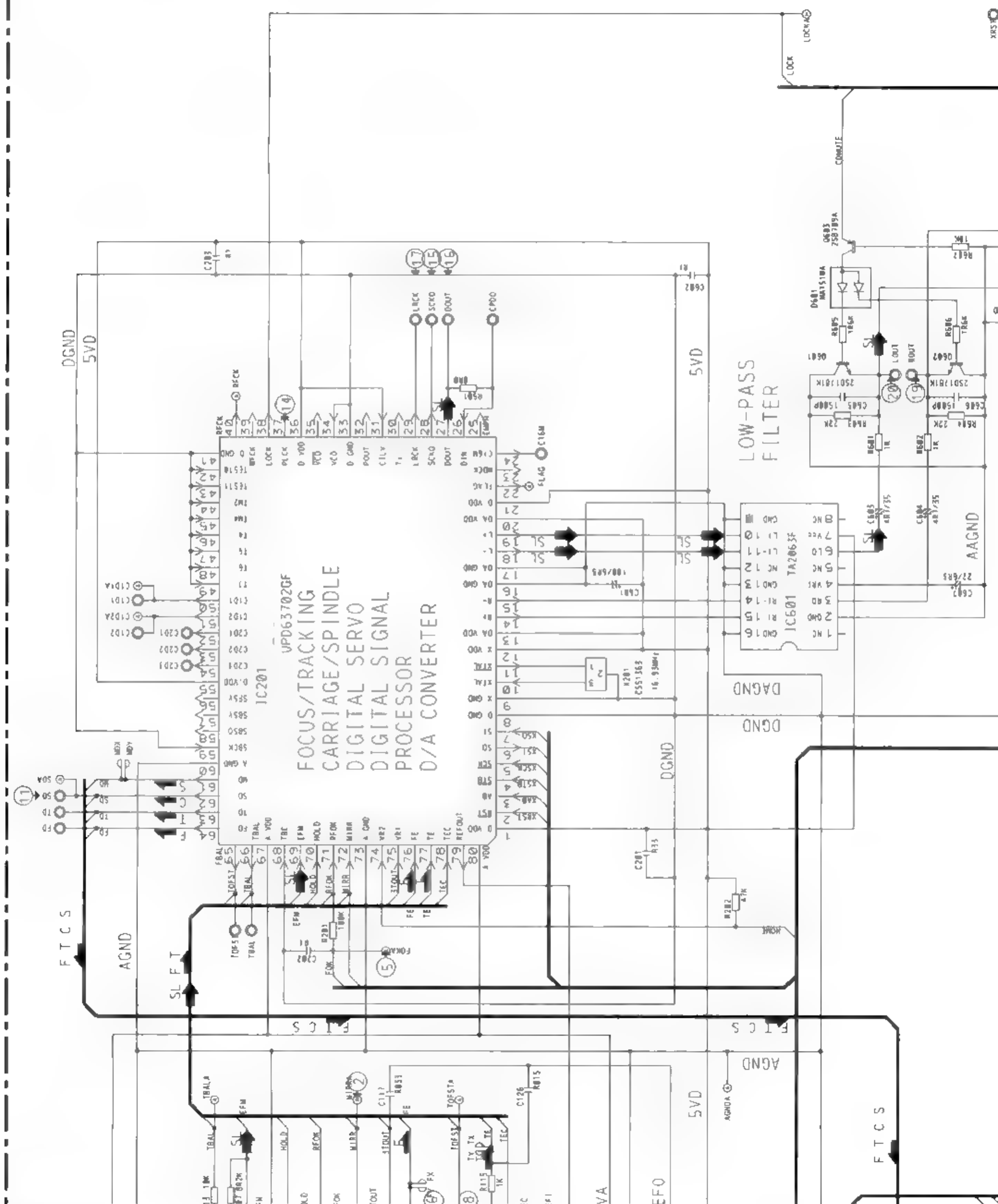
D DETECTOR PCB

SWITCHES
CONTROL UNIT
S801 HOME SWITCH ON-OFF
S802 CLAMP SWITCH ON-OFF
The underlined indicates the switch position.

E-a E-b

Fig. 1

E-a



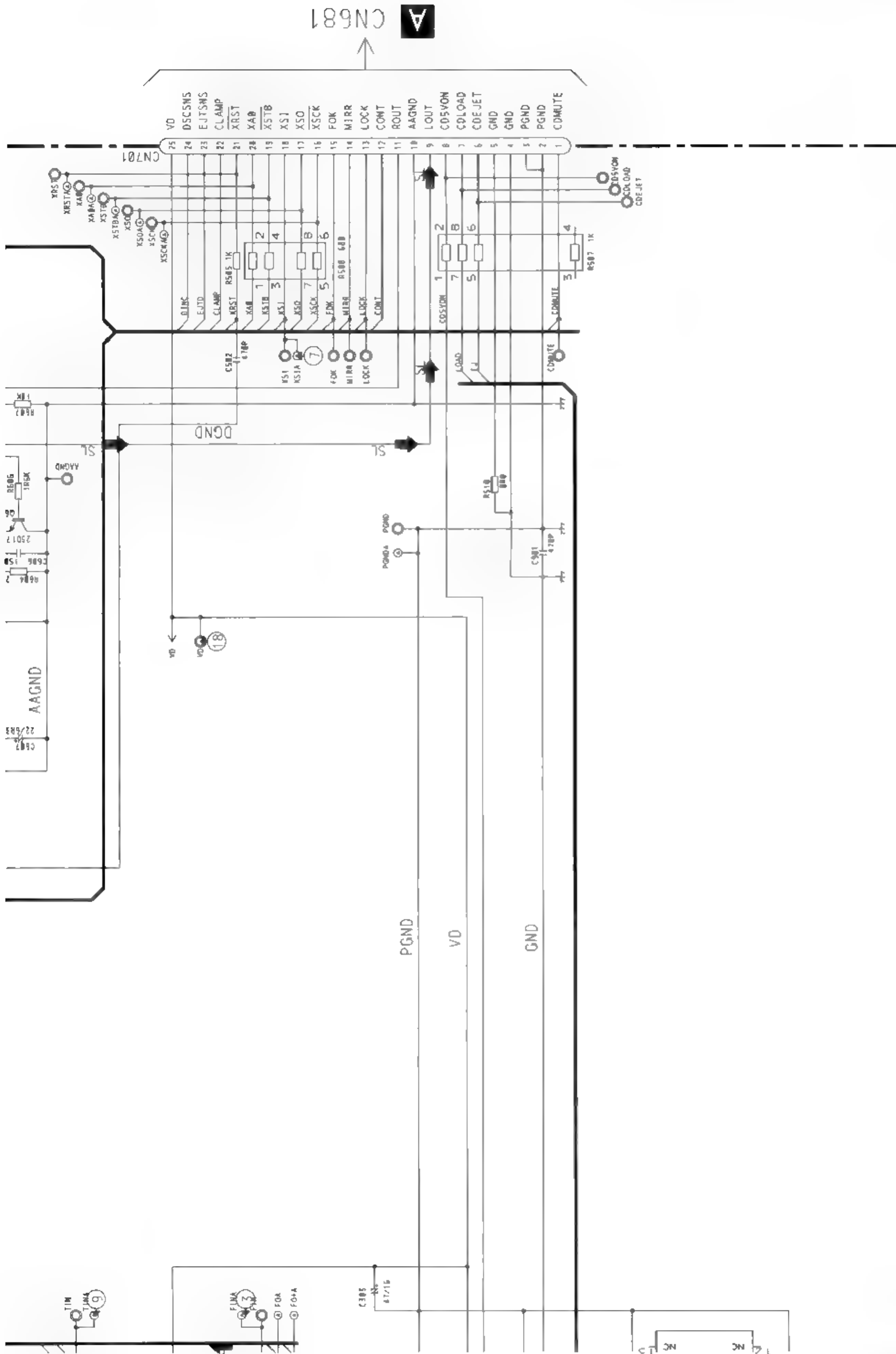
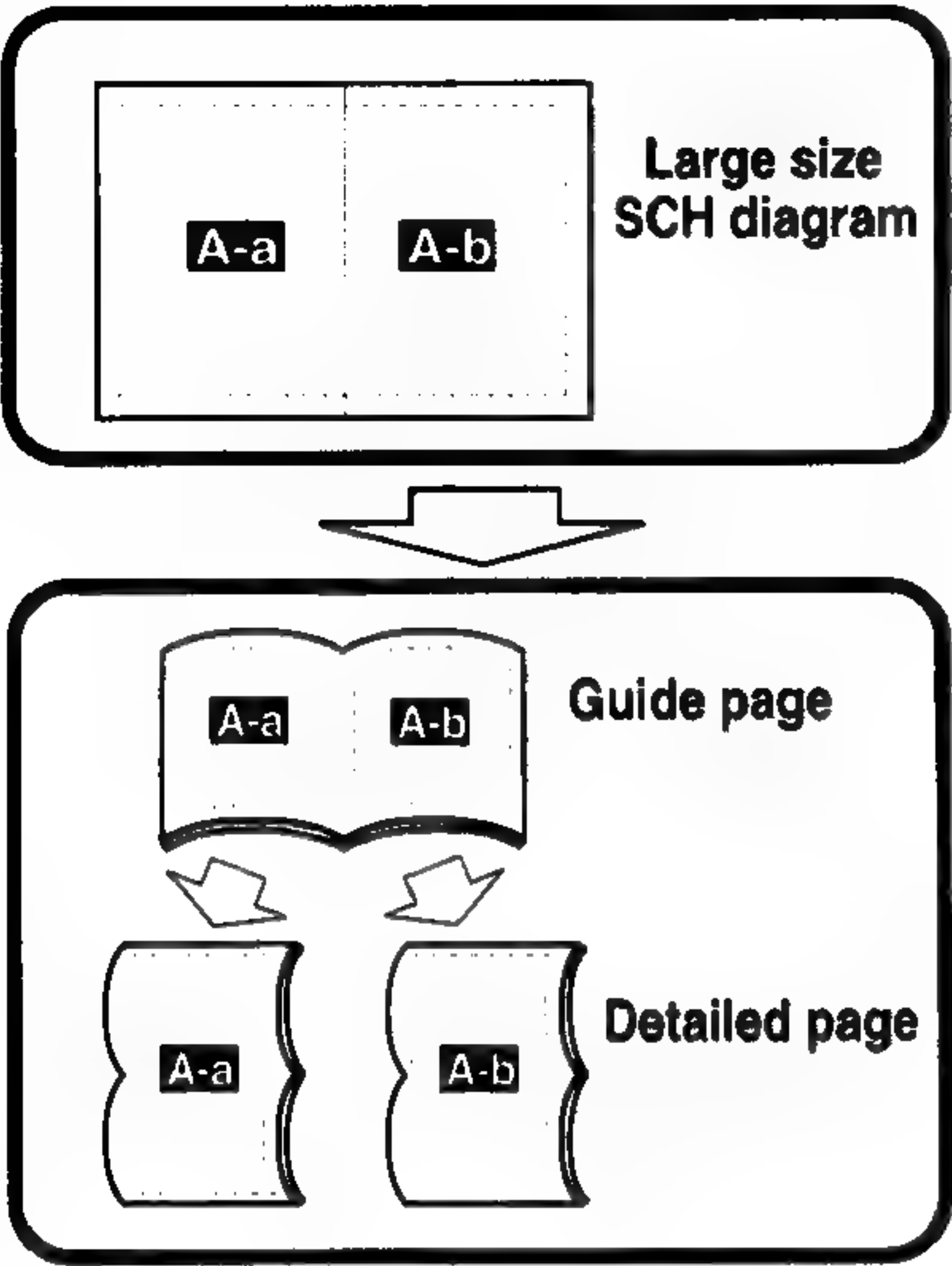
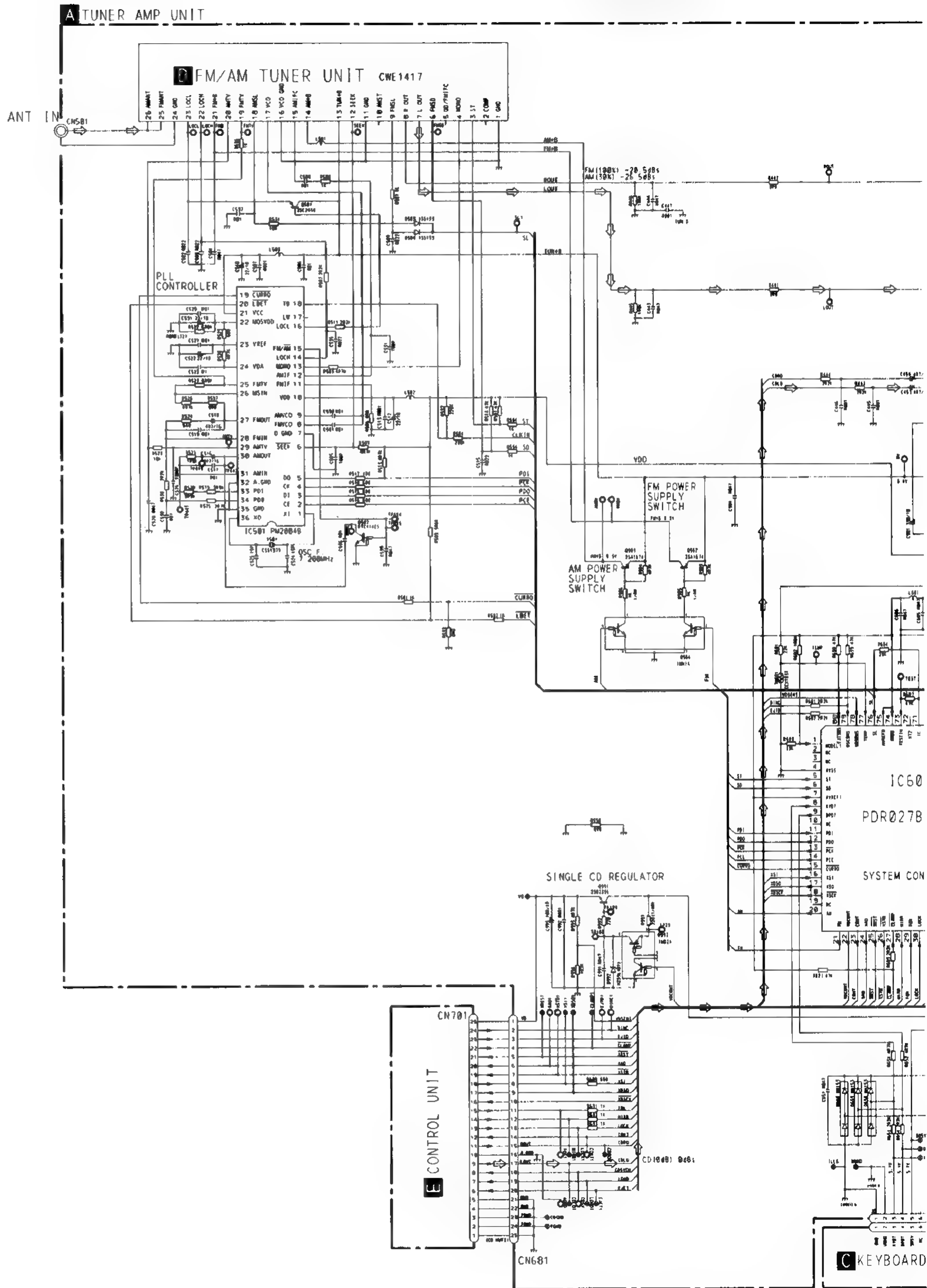


Fig. 9

3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)
(DEH-48/X1M/UC)



A-a



A-b

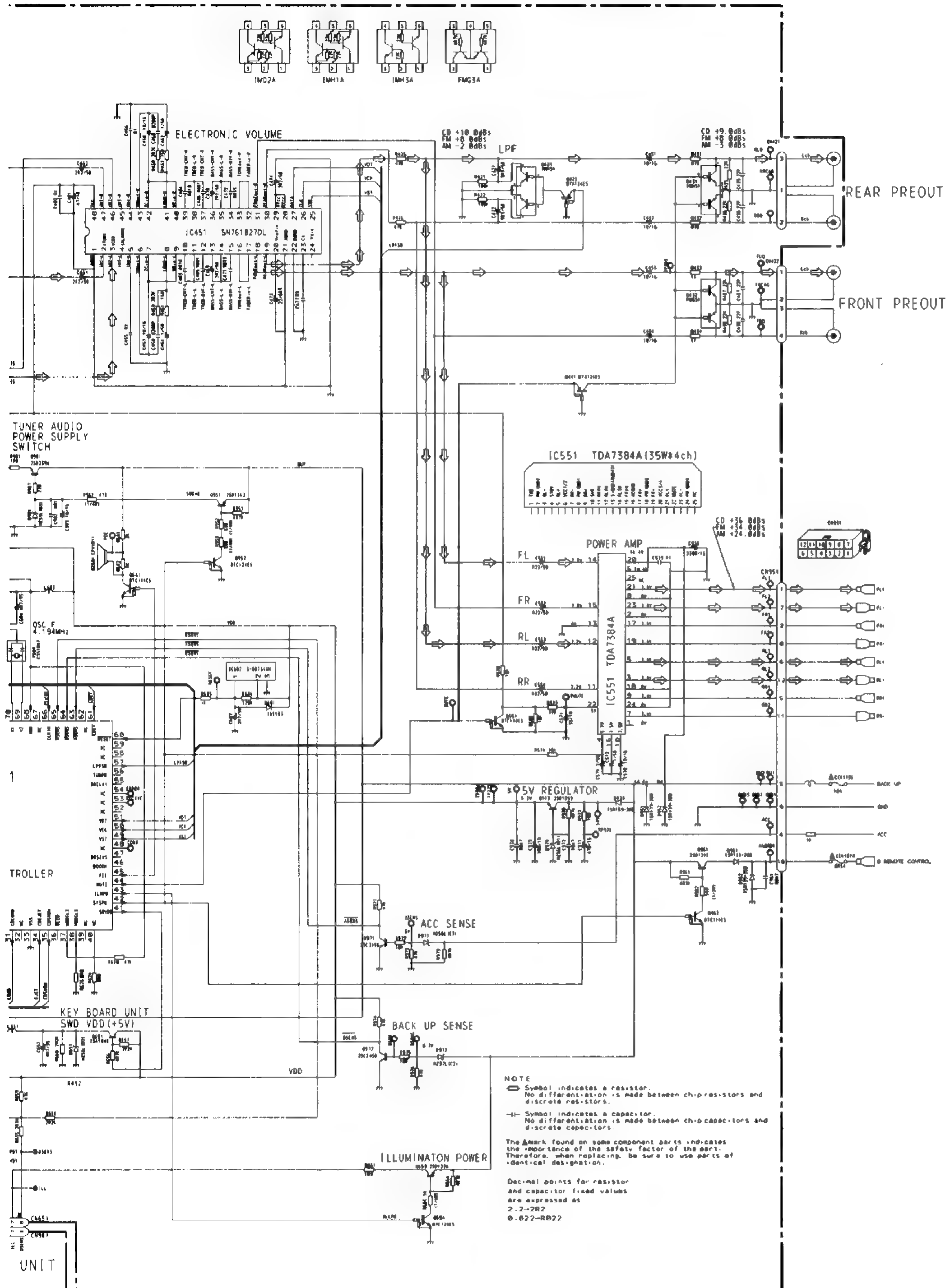
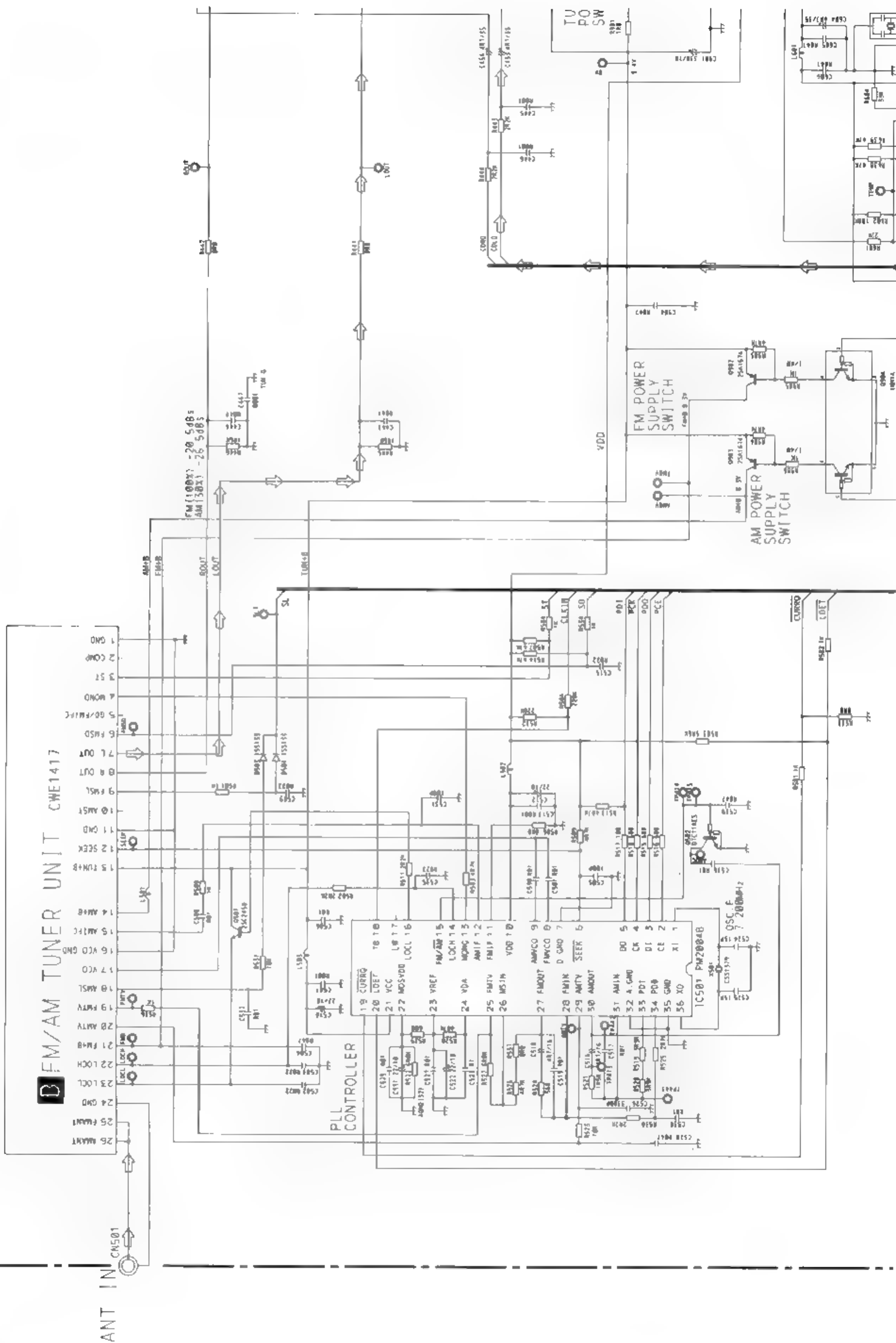


Fig. 10

A TUNER AMP UNIT



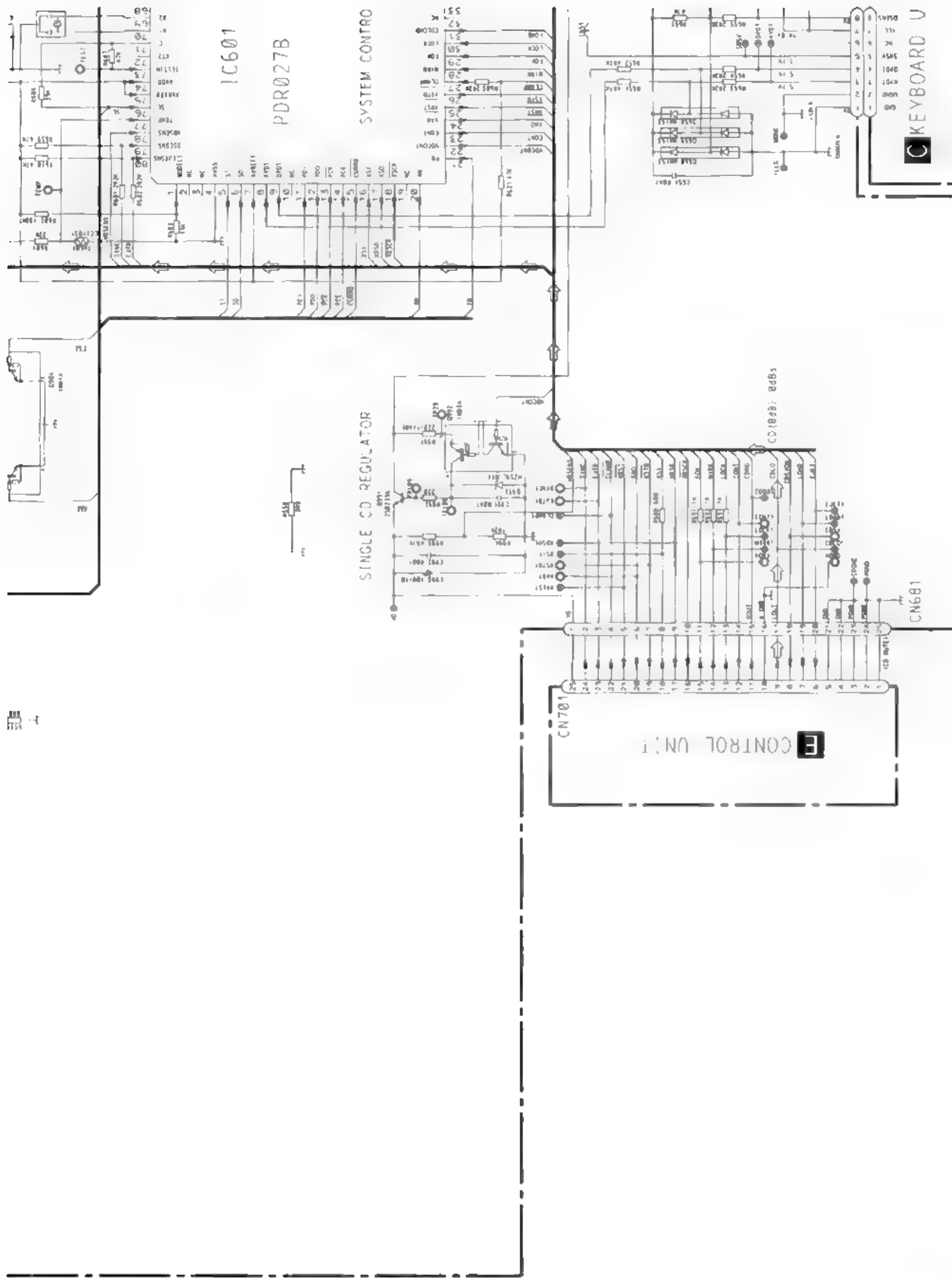
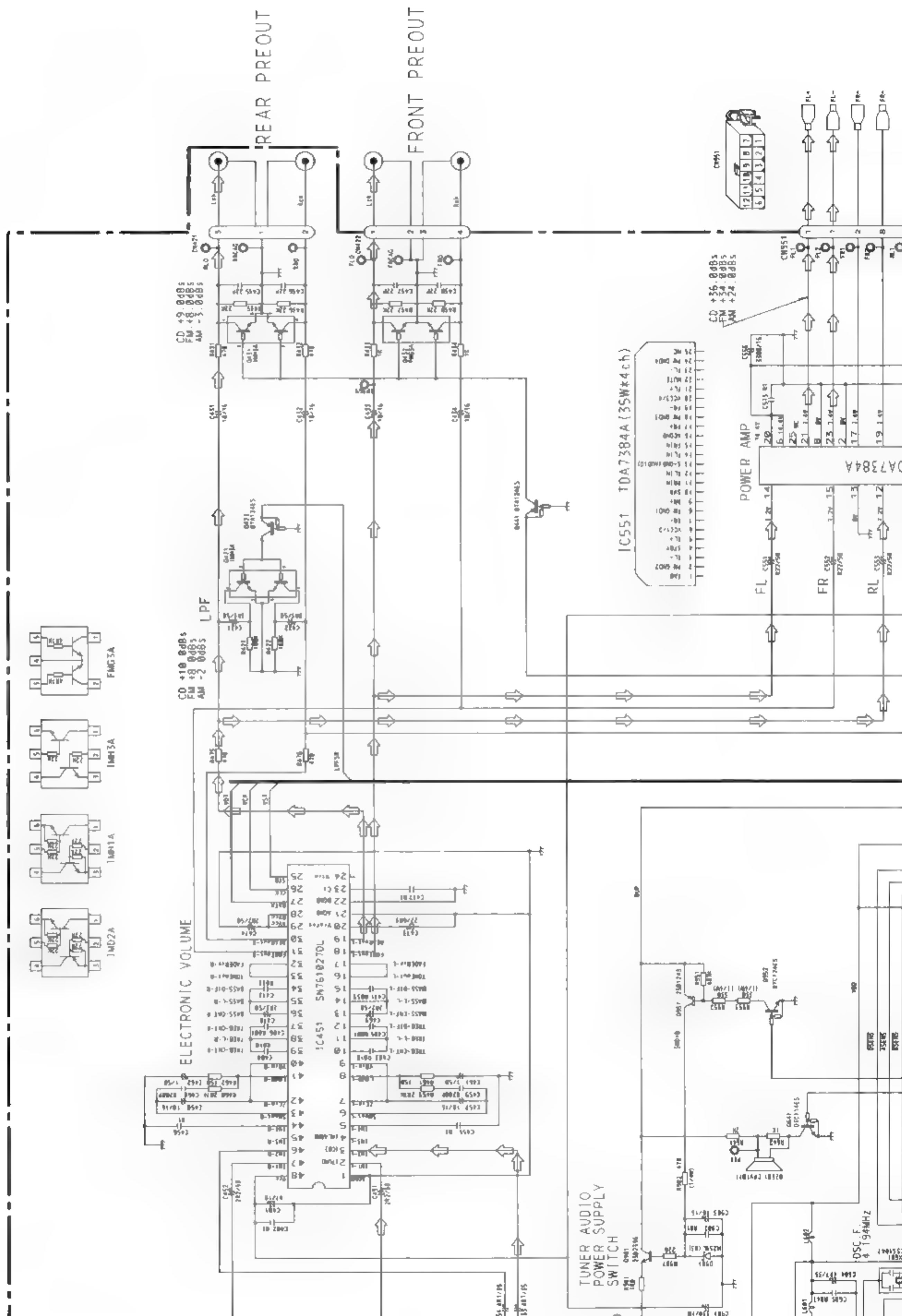


Fig. 11

A-a

A-b



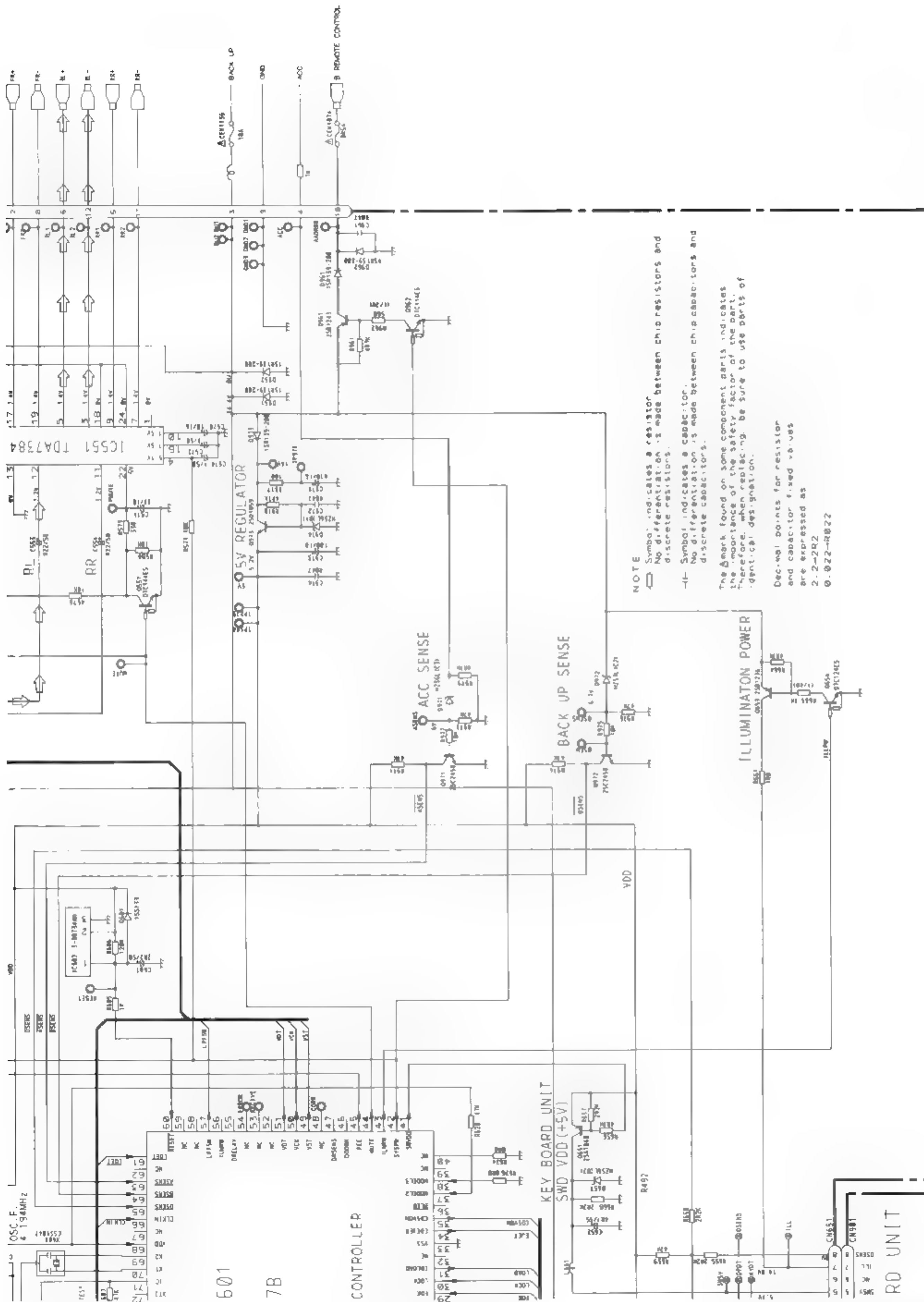
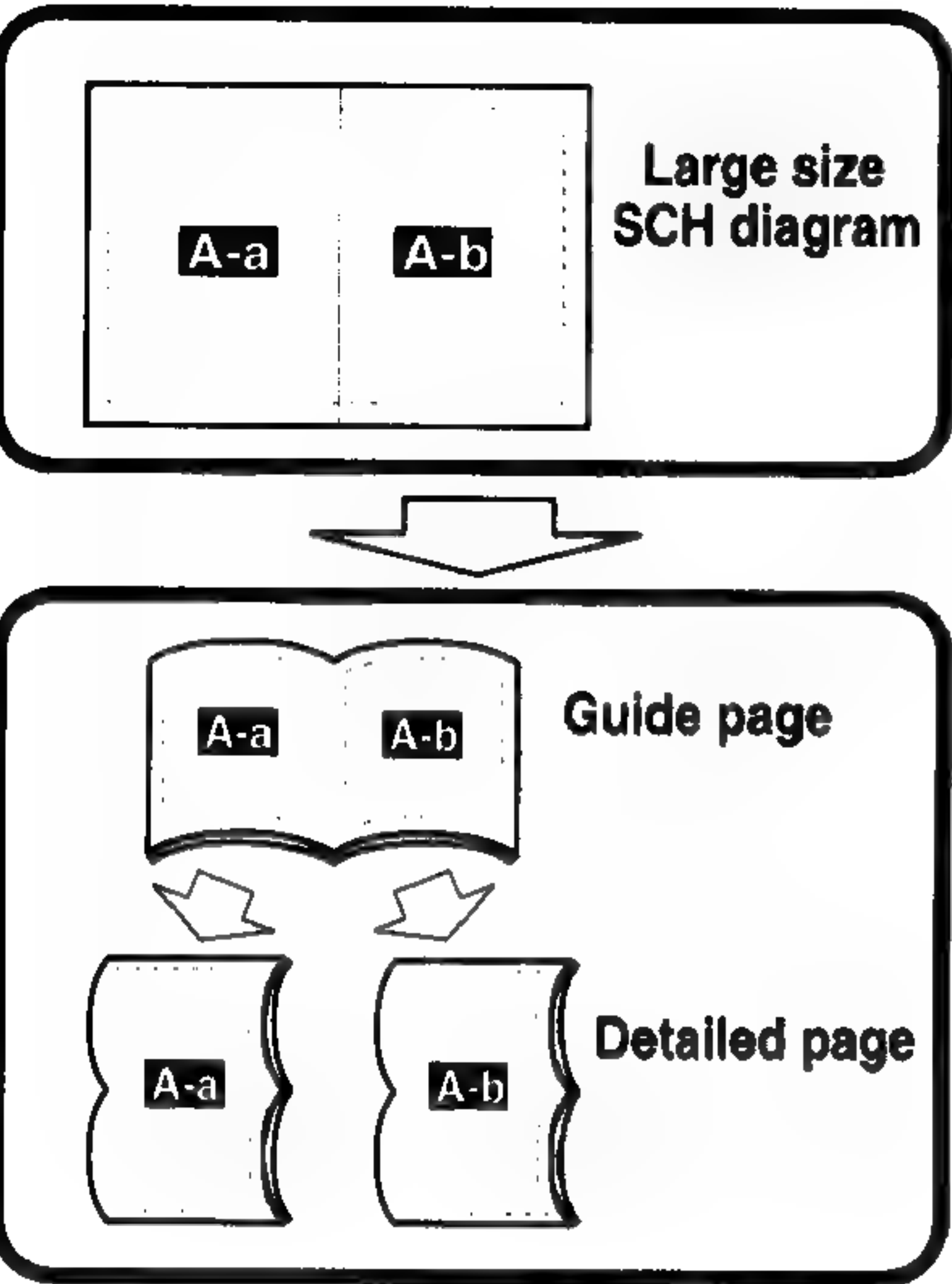
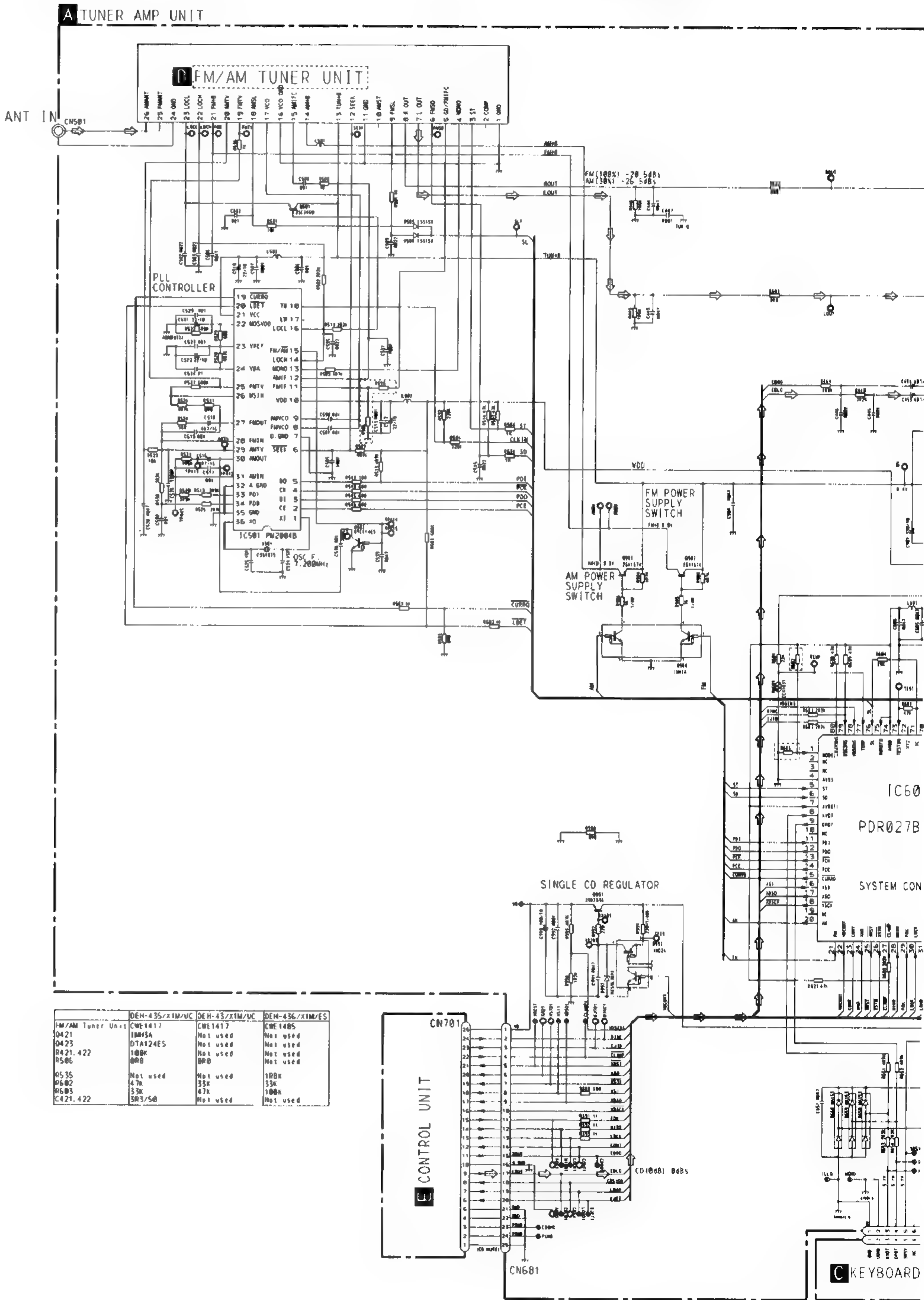


Fig. 12

3.3 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)
(DEH-435/X1M/UC, 43/X1M/UC, 436/X1M/ES)



A-a



A-b

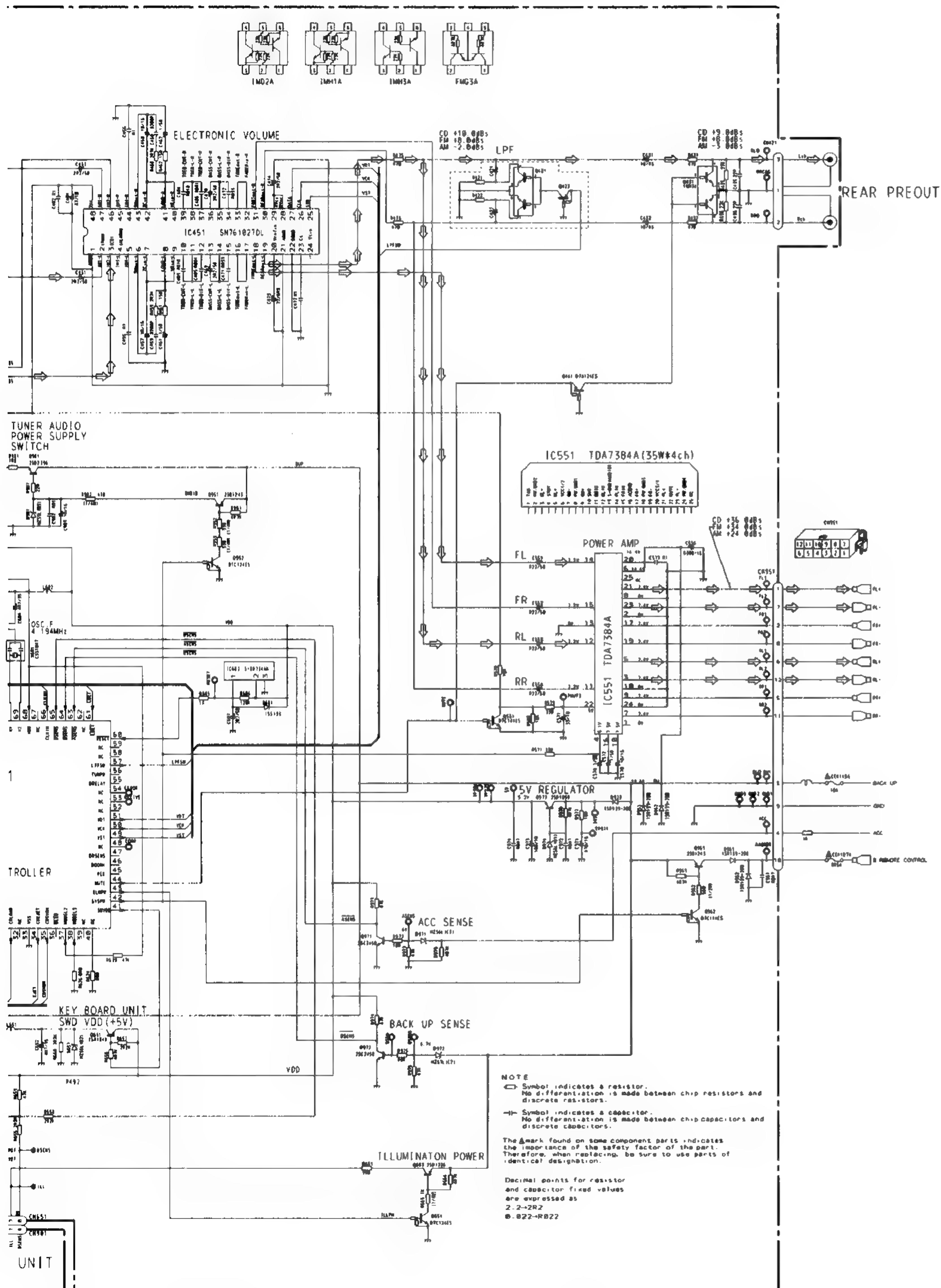
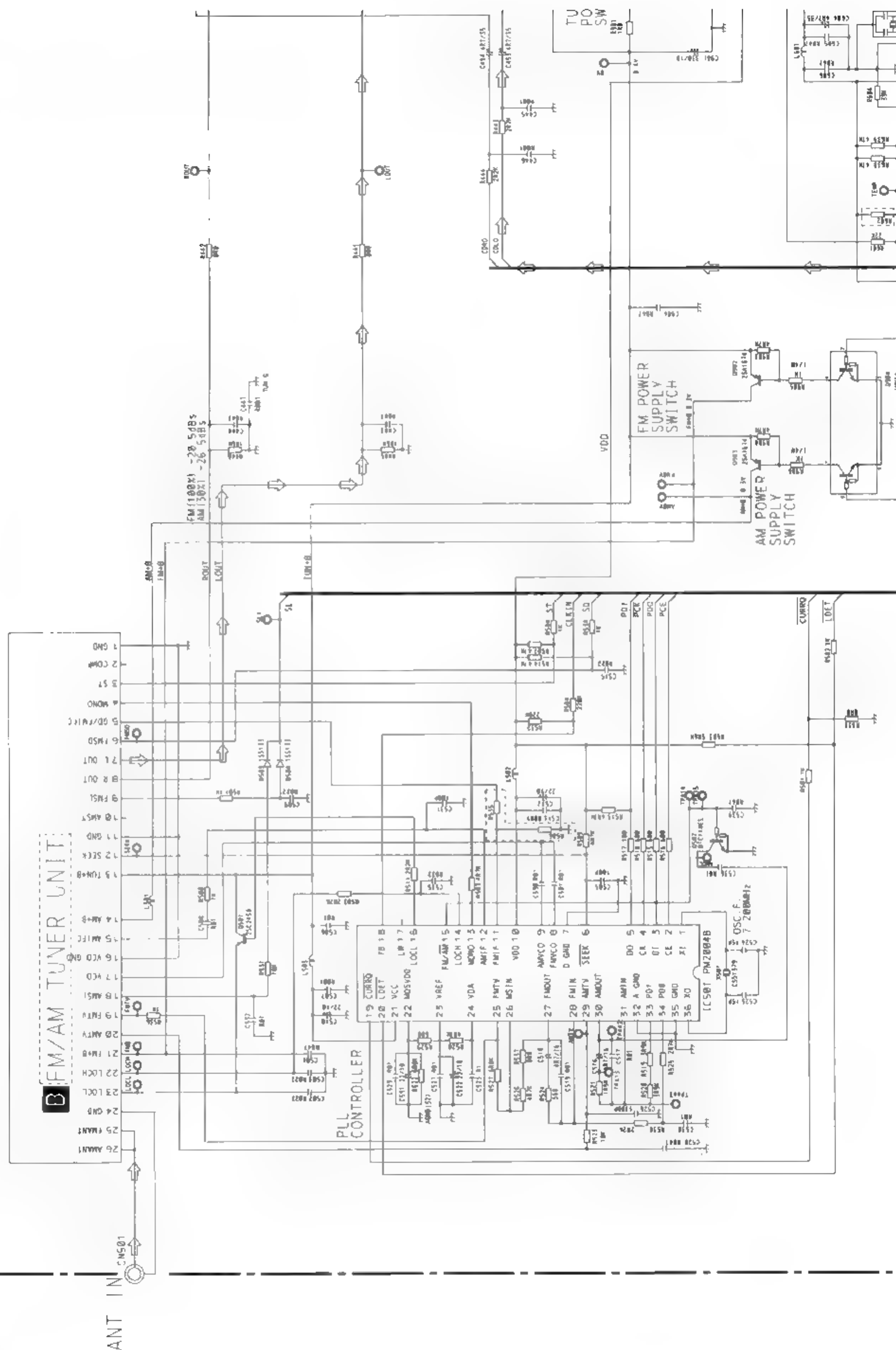


Fig. 13

A TUNER AMP UNIT



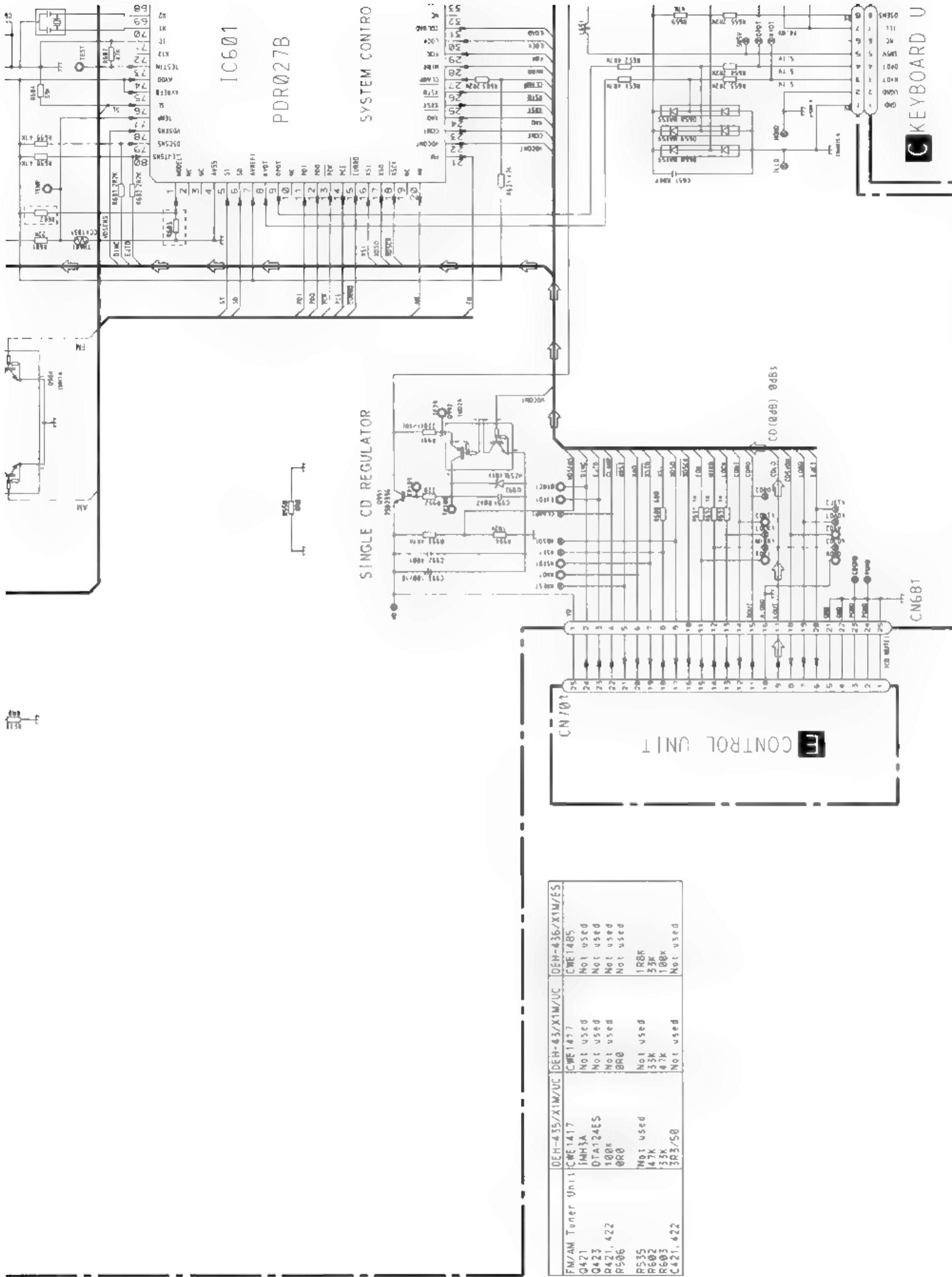
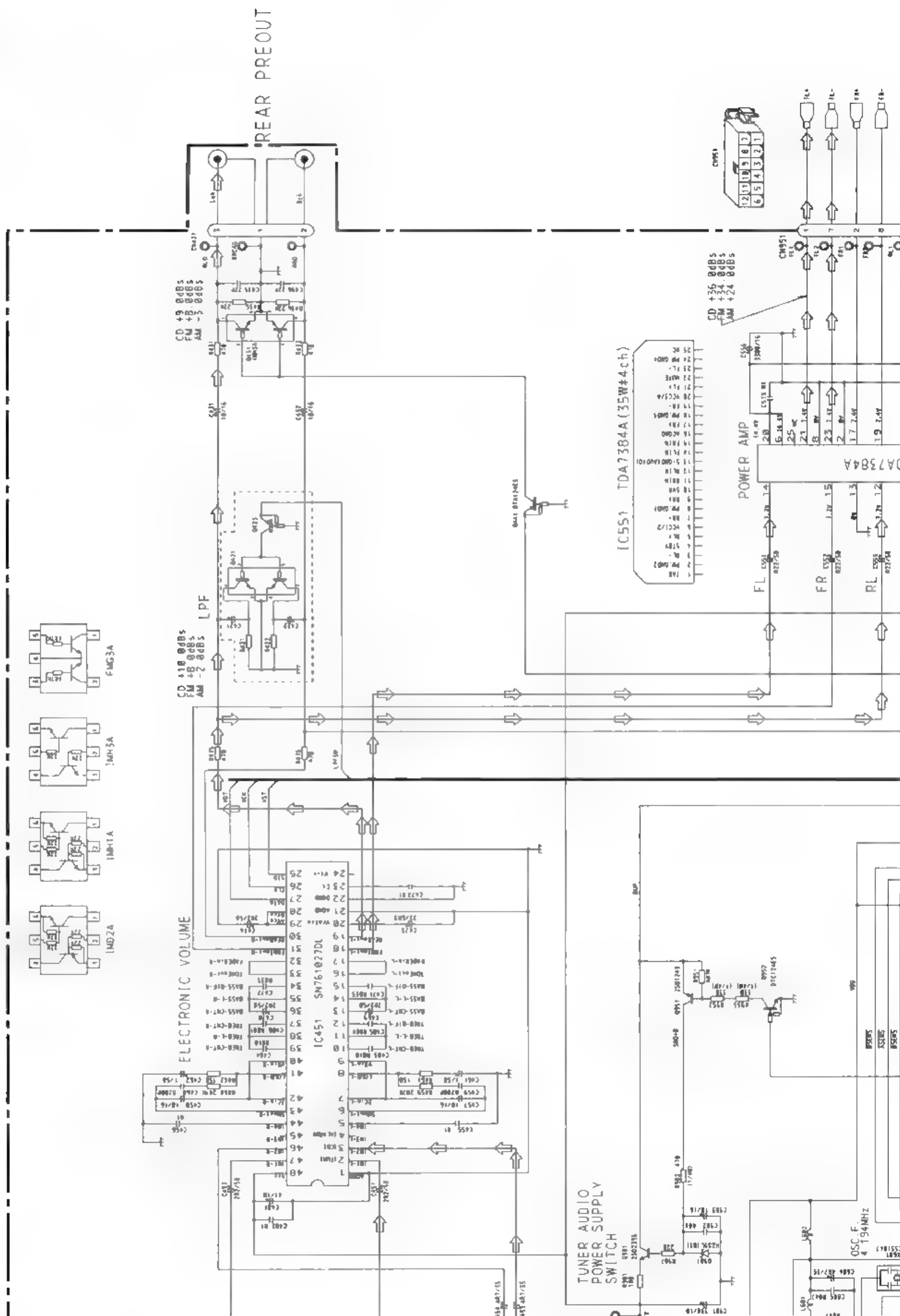


Fig. 14



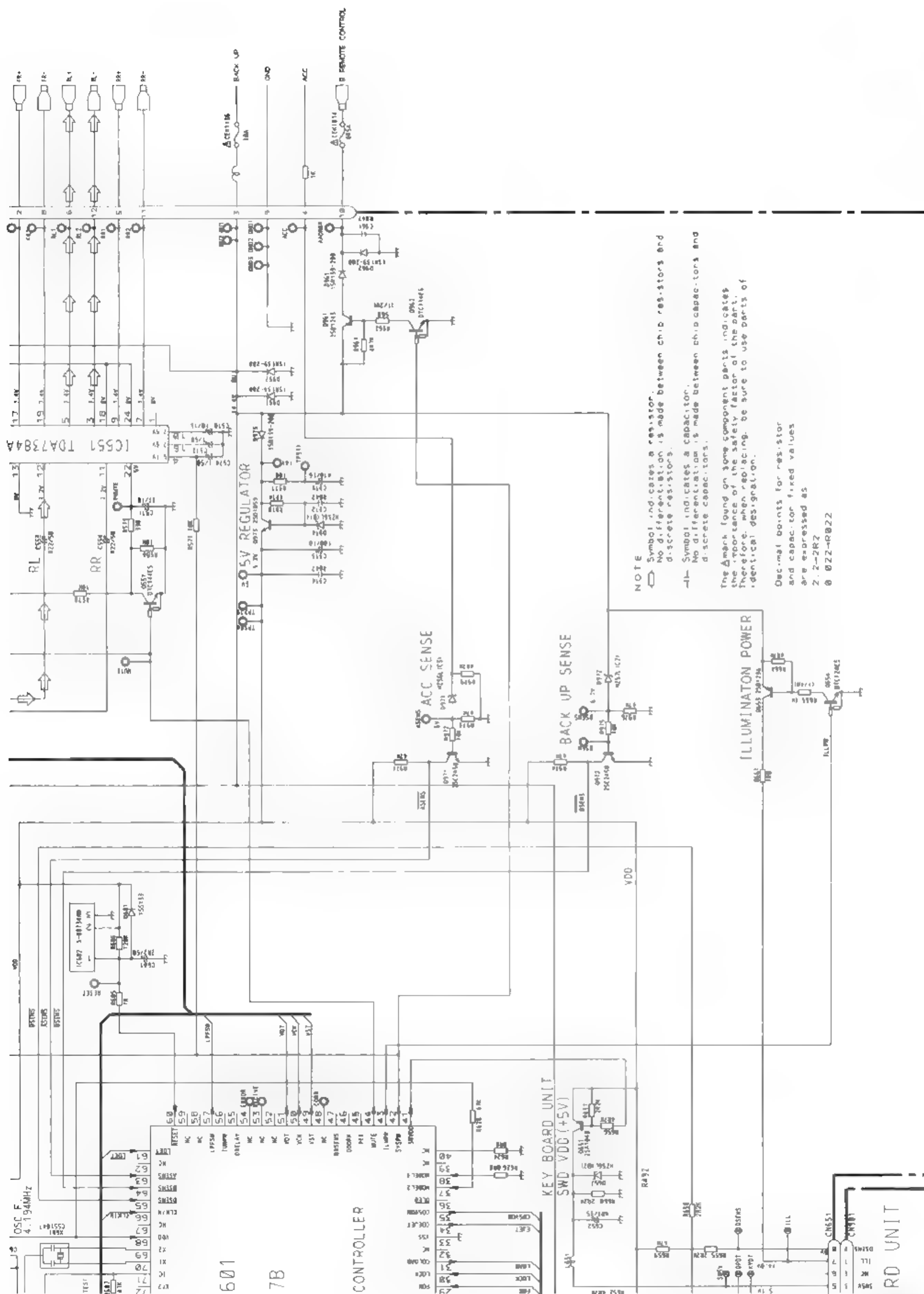
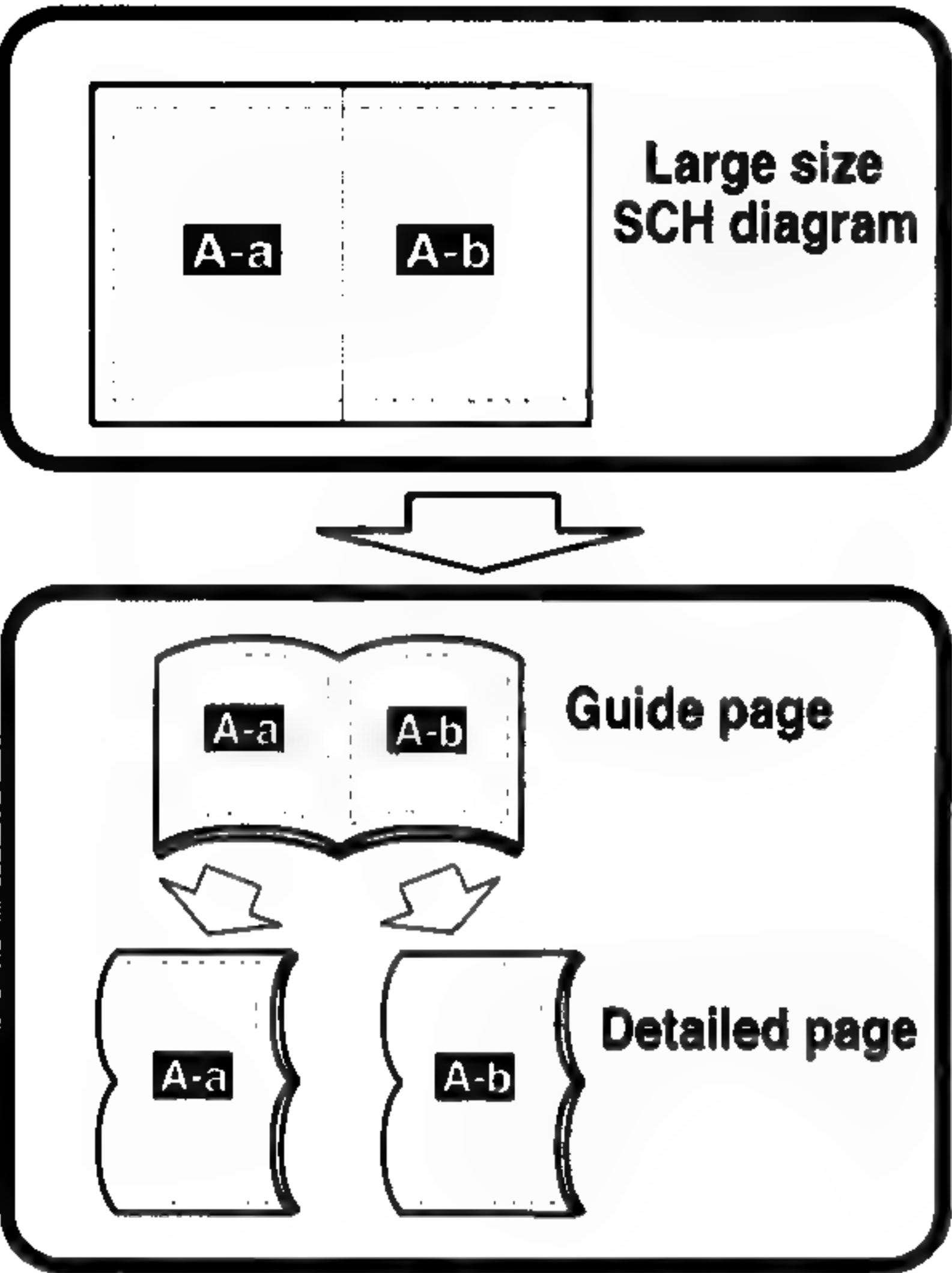
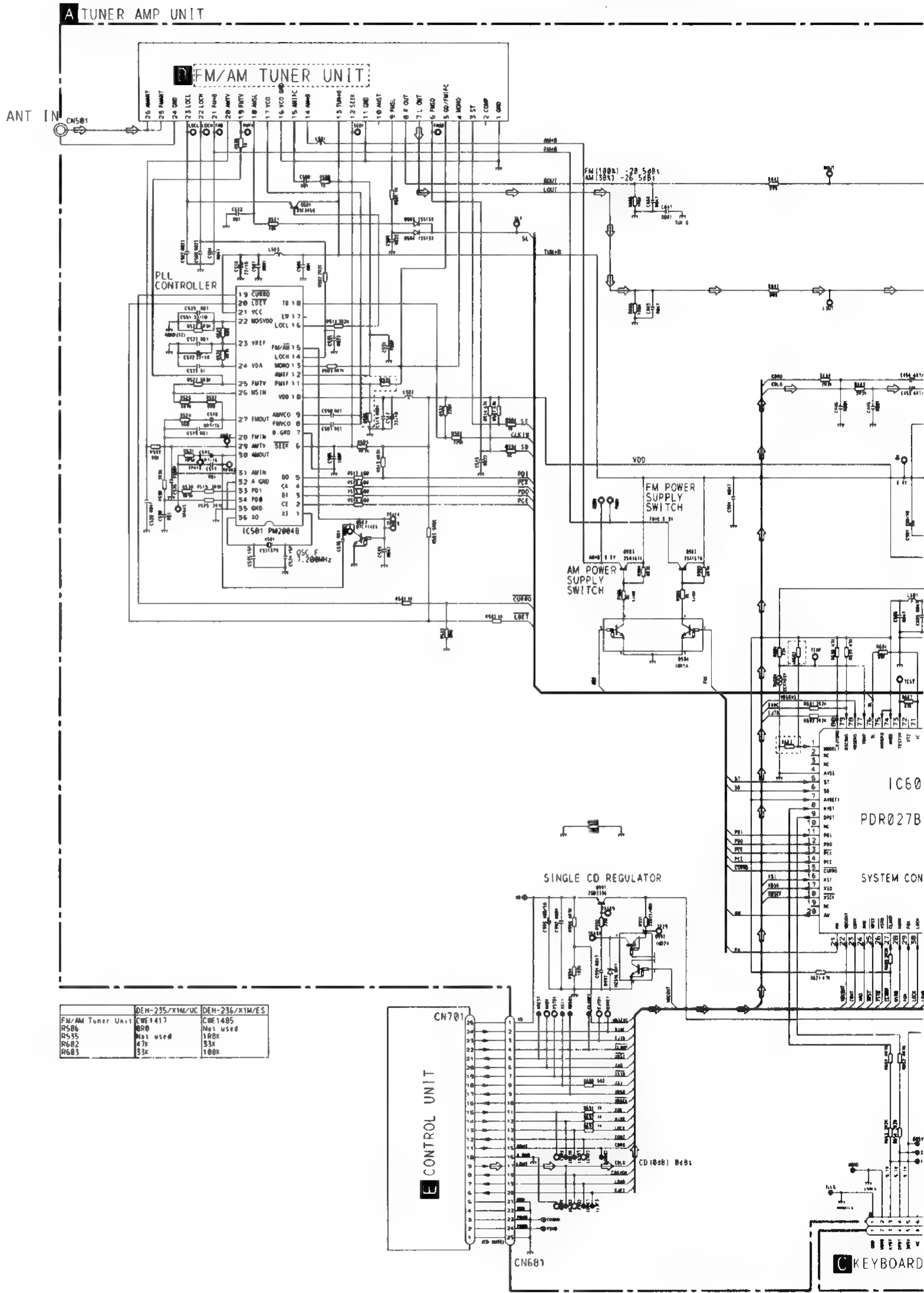


Fig. 15

3.4 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)
(DEH-235/X1M/UC, 236/X1M/ES)



A-a



A-b

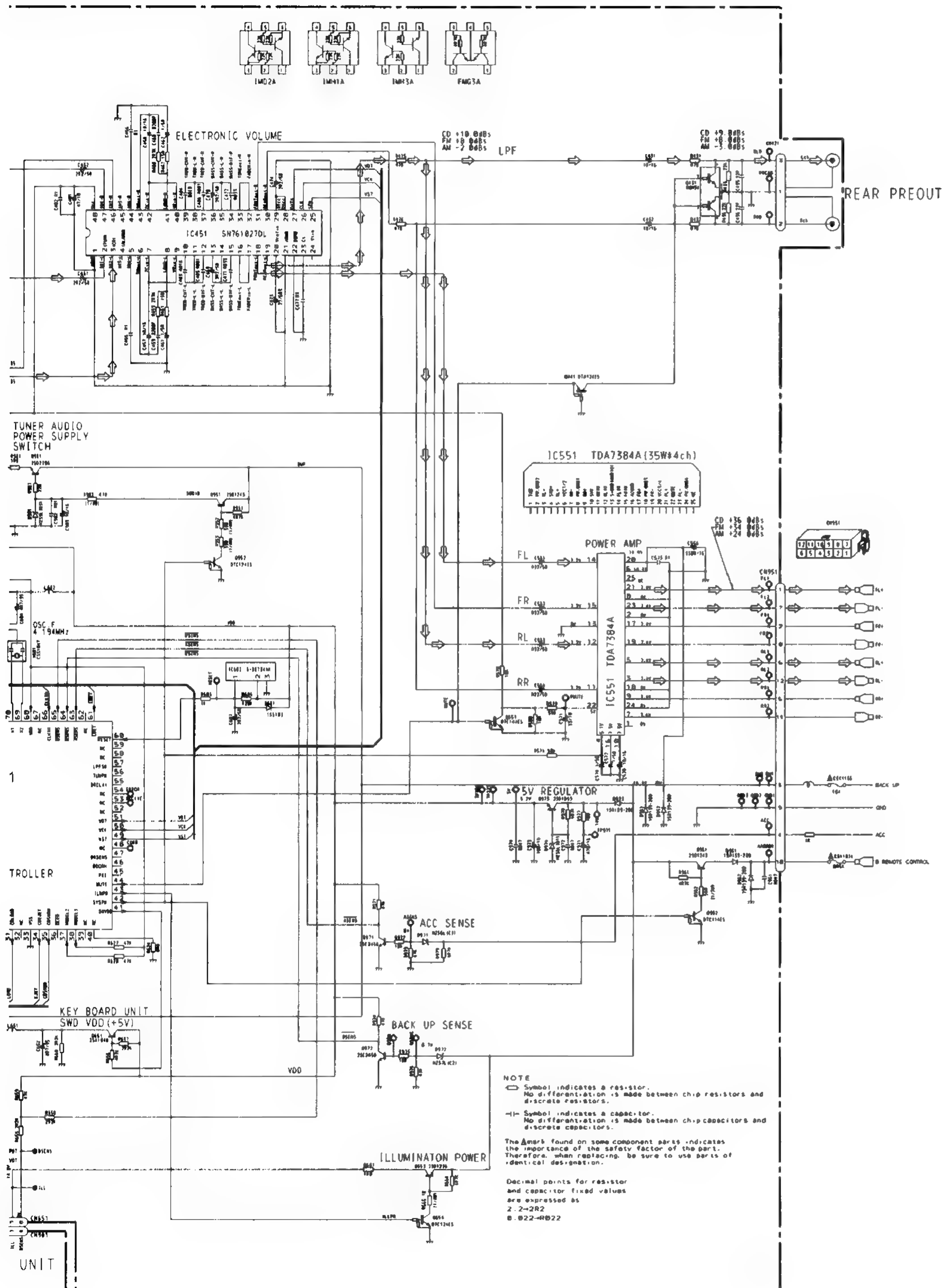
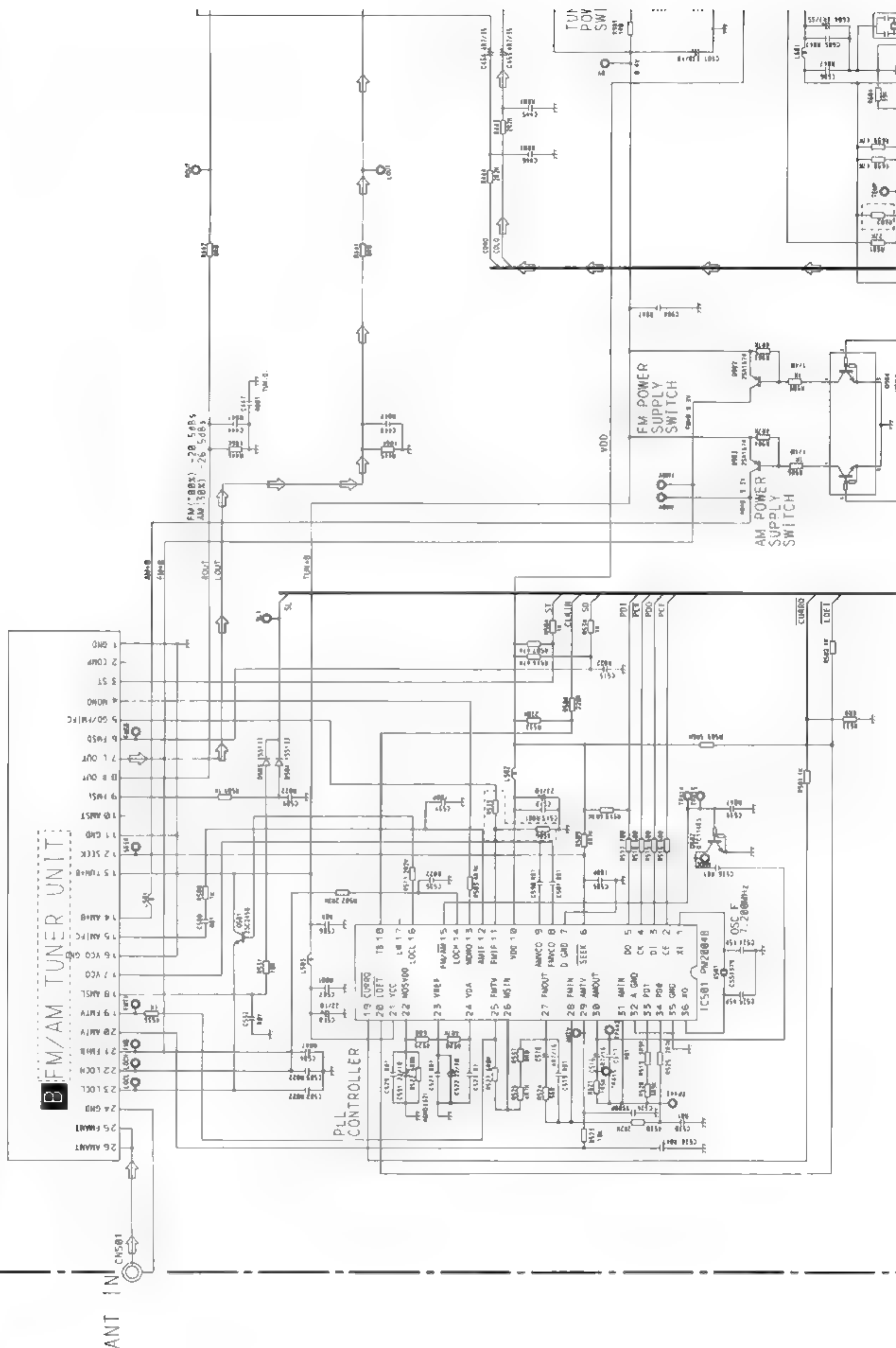


Fig. 16

A-b

A TUNER AMP UNIT



A-a

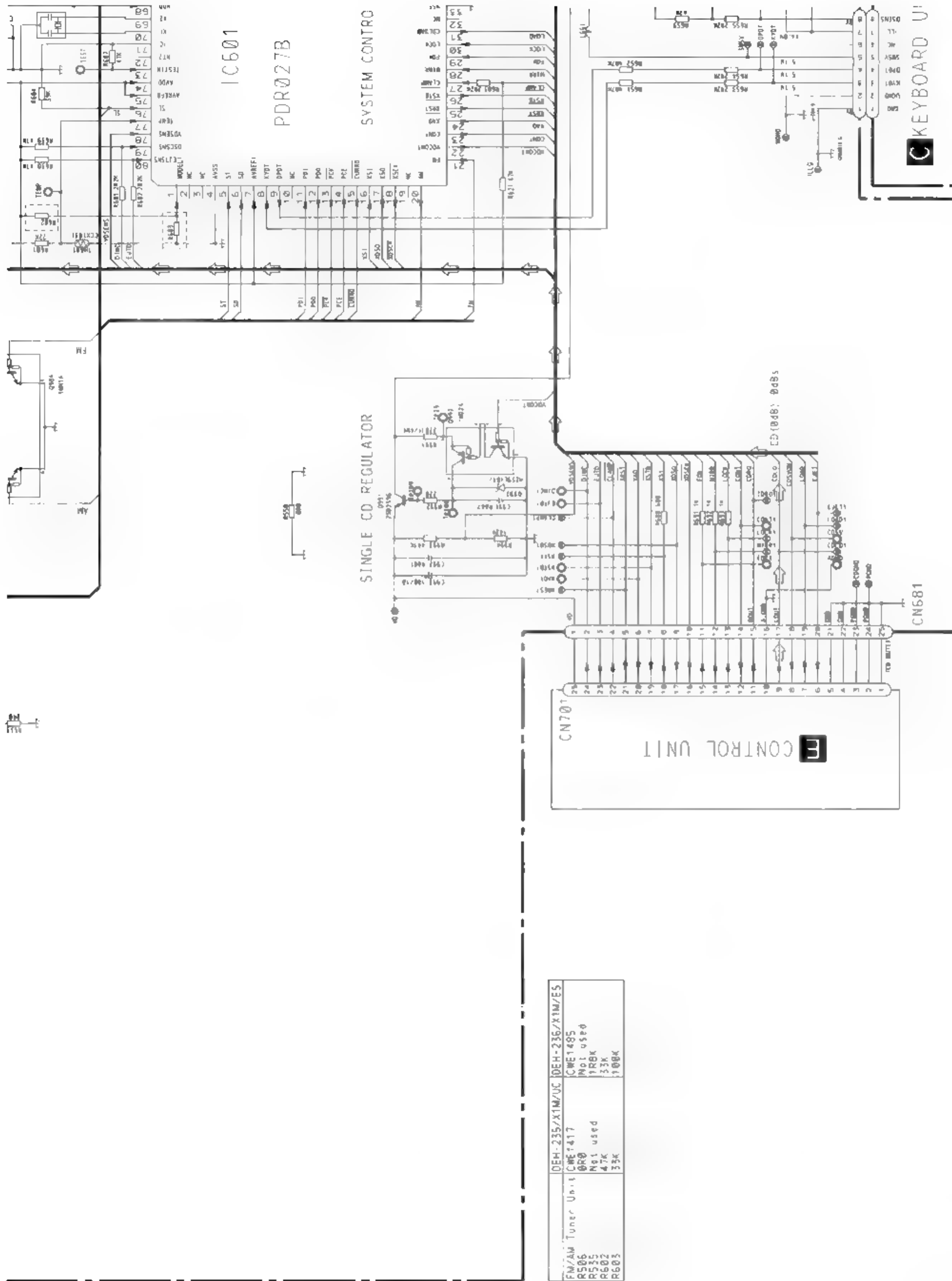
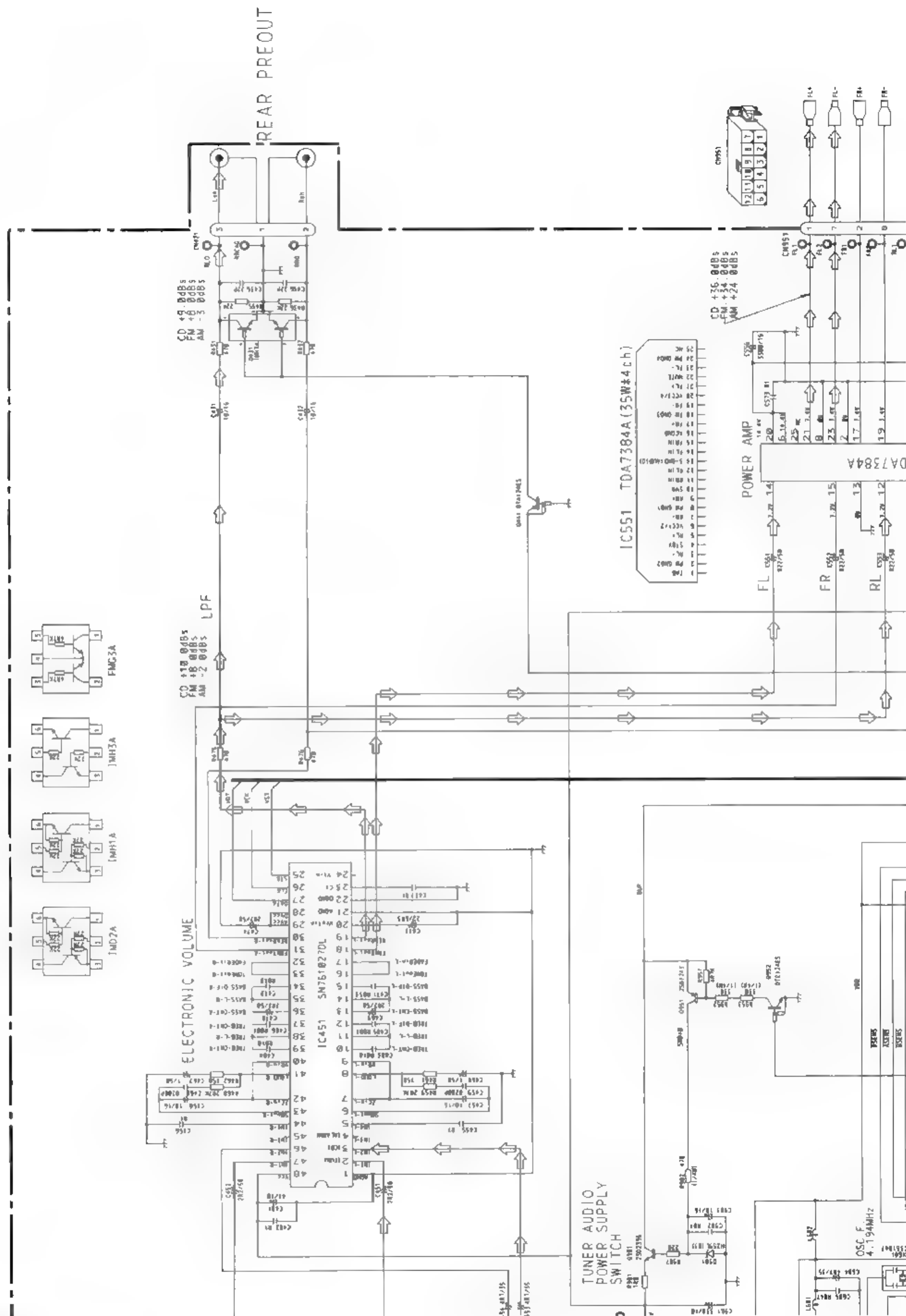


Fig. 17



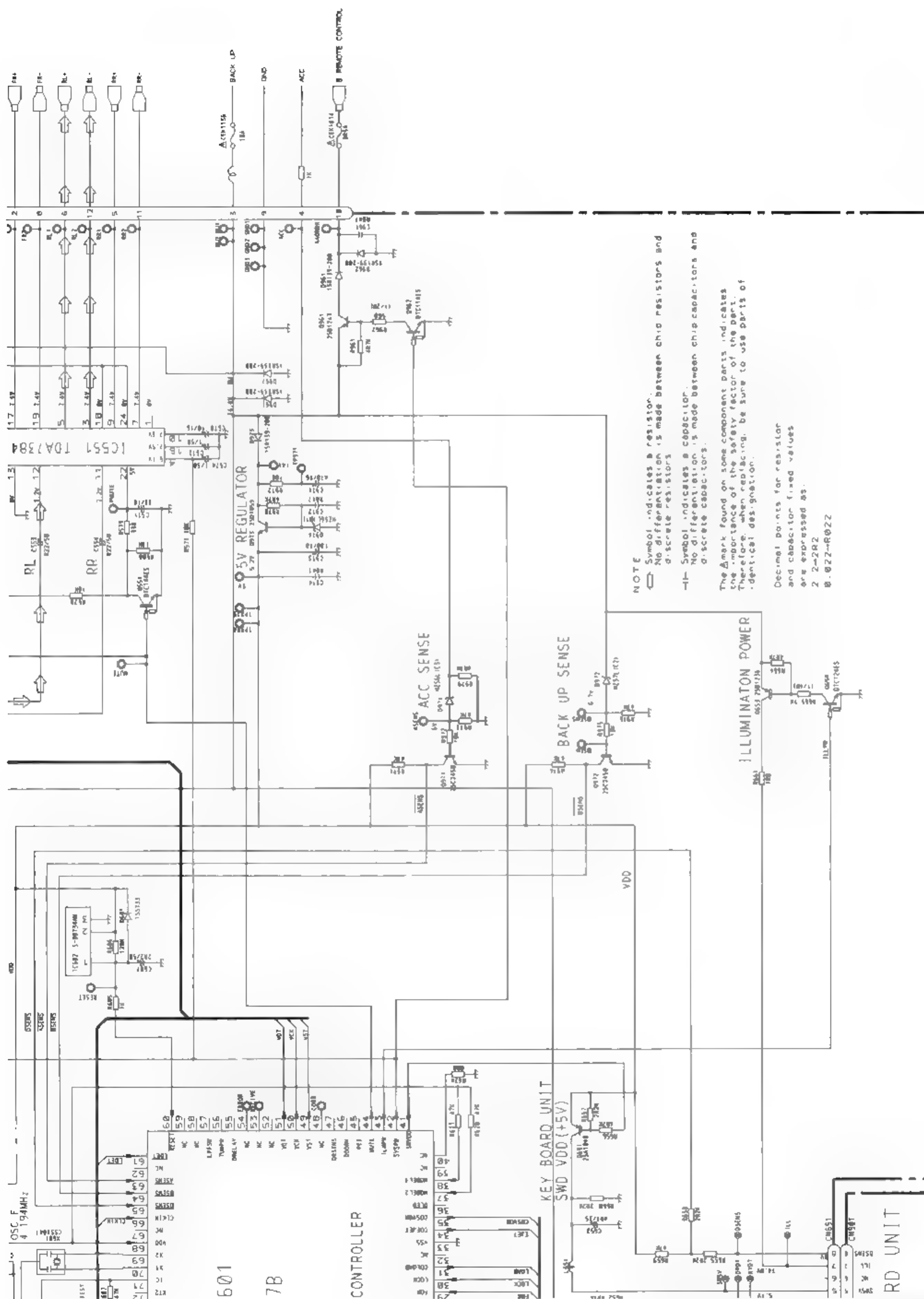
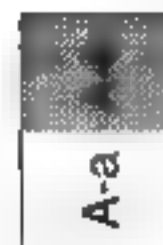


Fig. 18

3.5 FM/AM TUNER UNIT

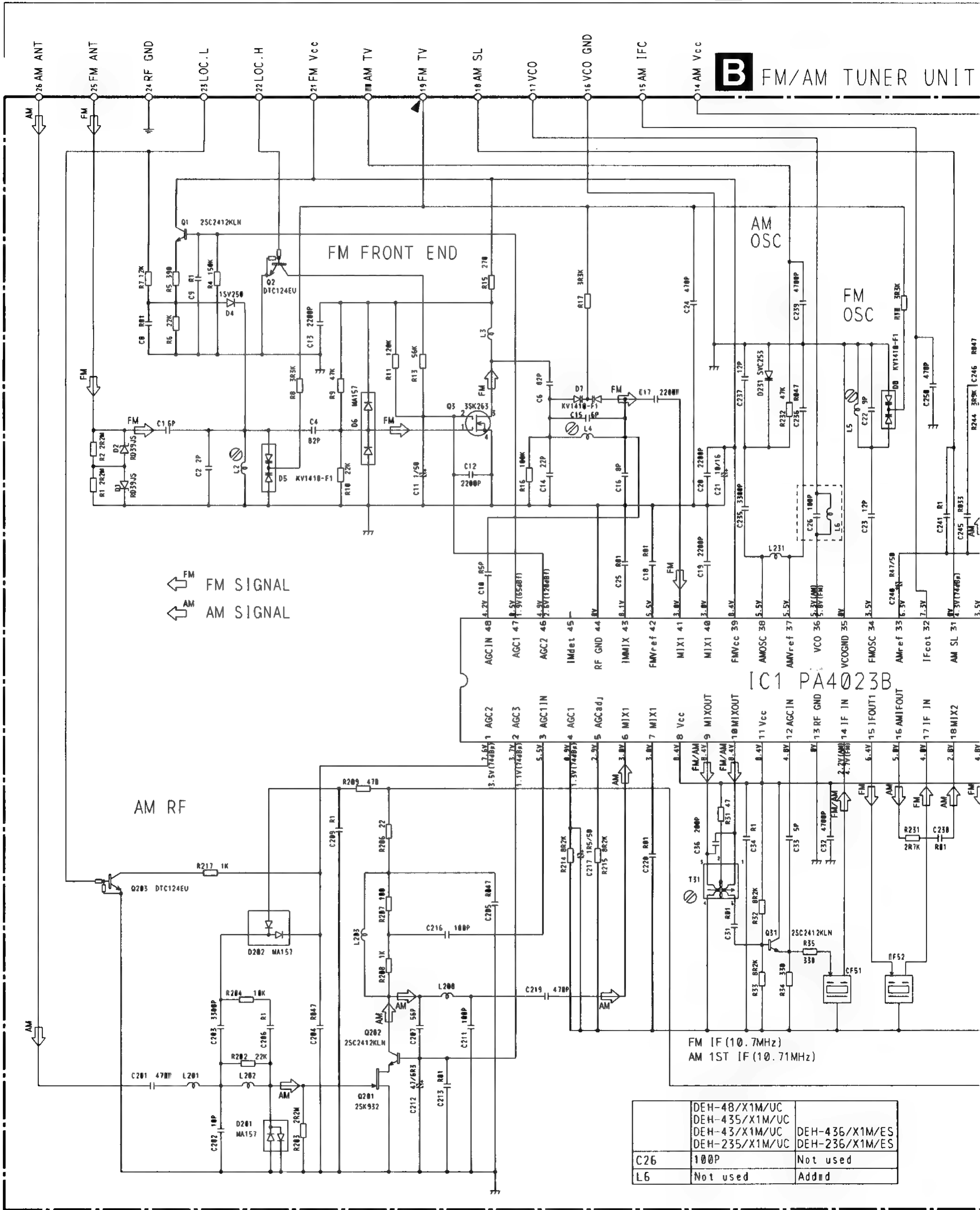
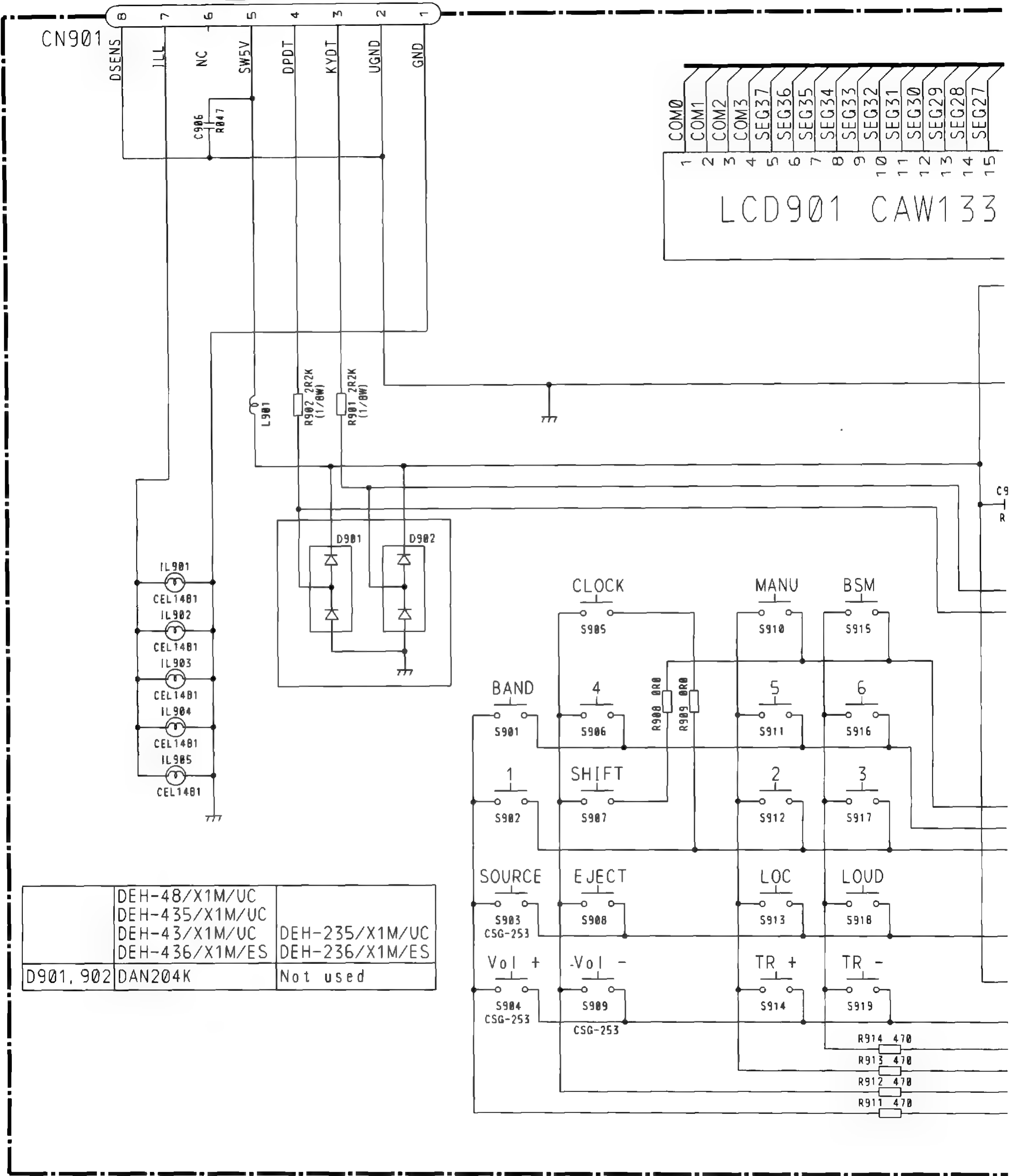




Fig. 19

3.6 KEYBOARD UNIT

A CN651



C KEYBOARD UNIT

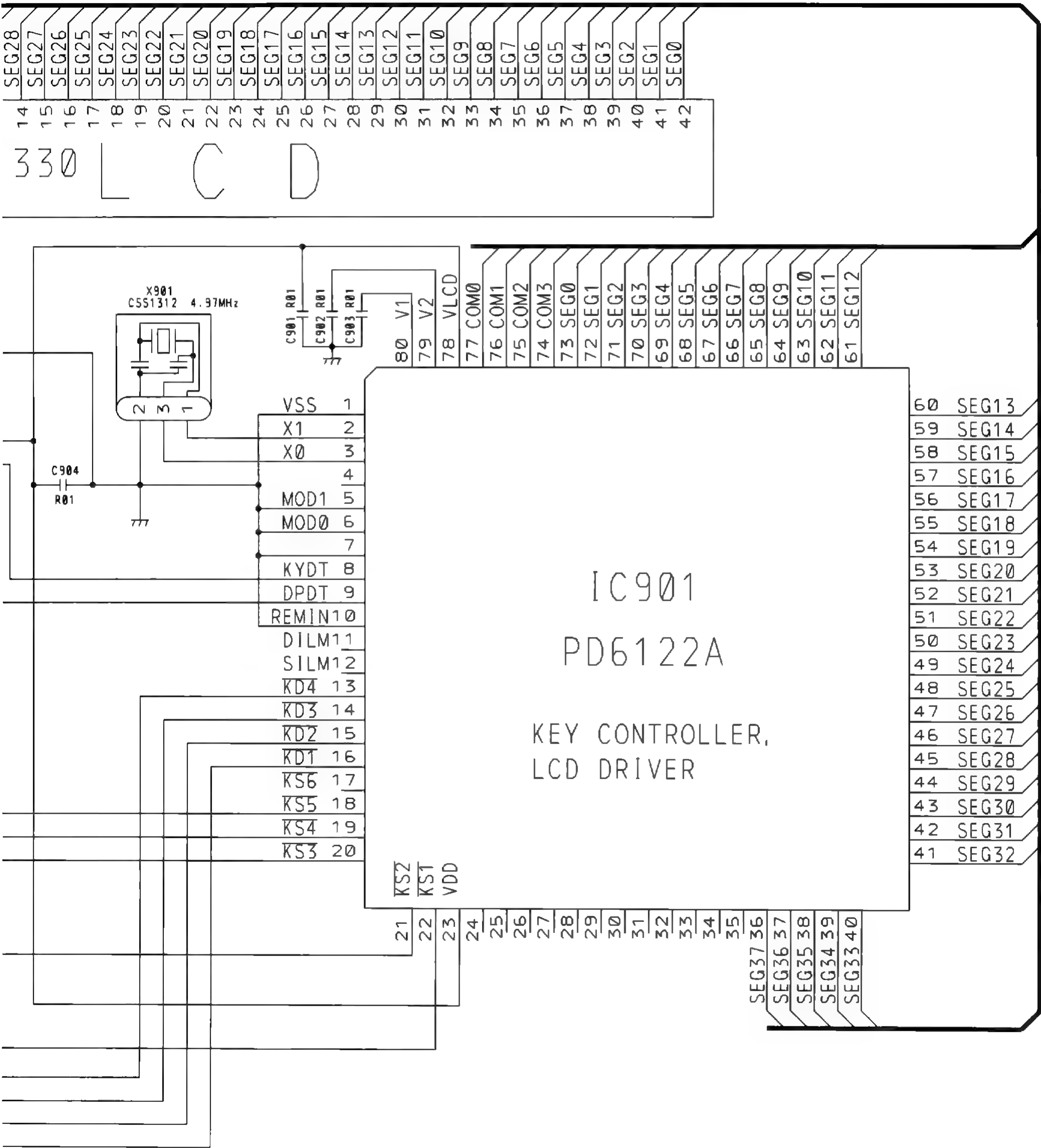


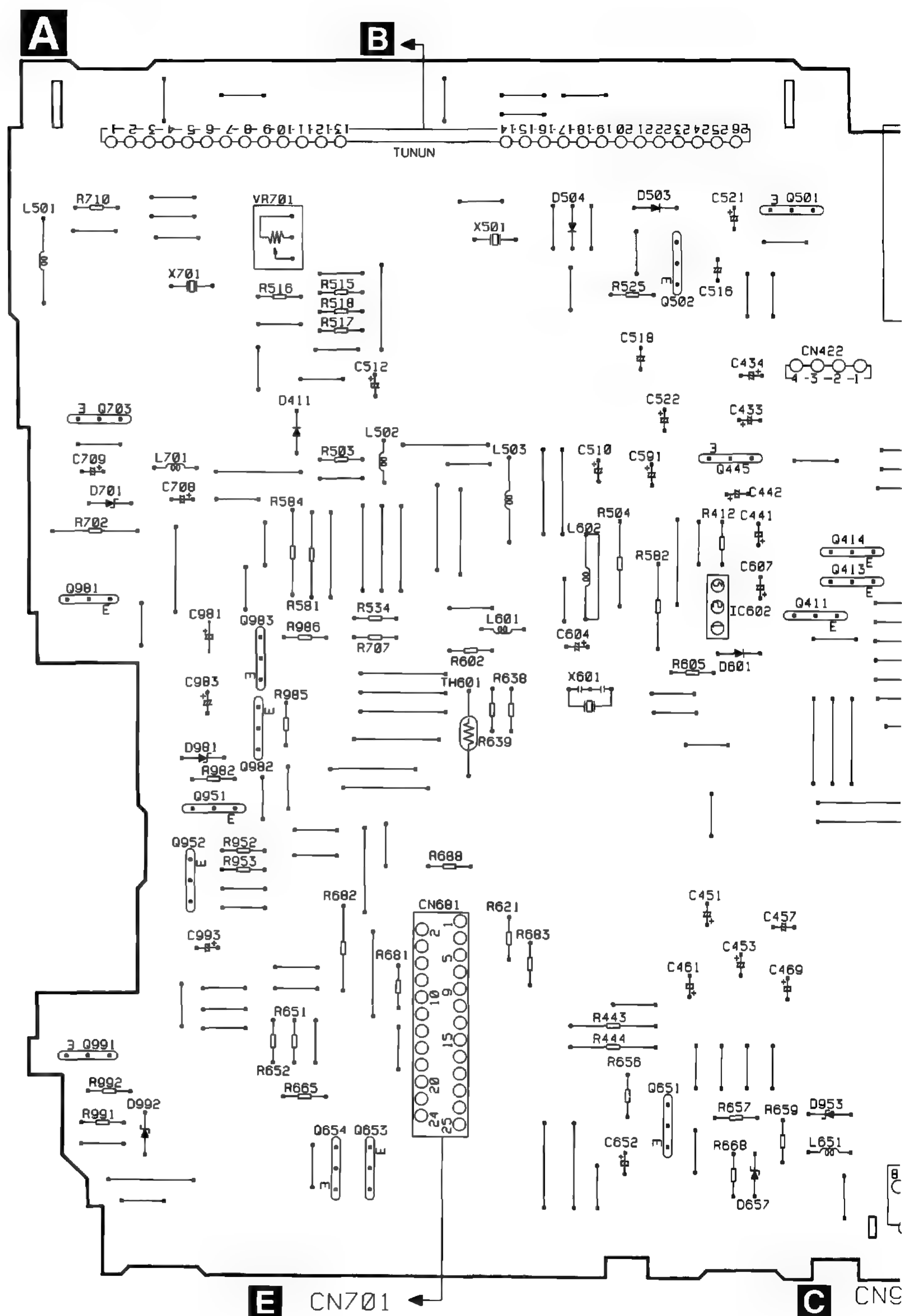
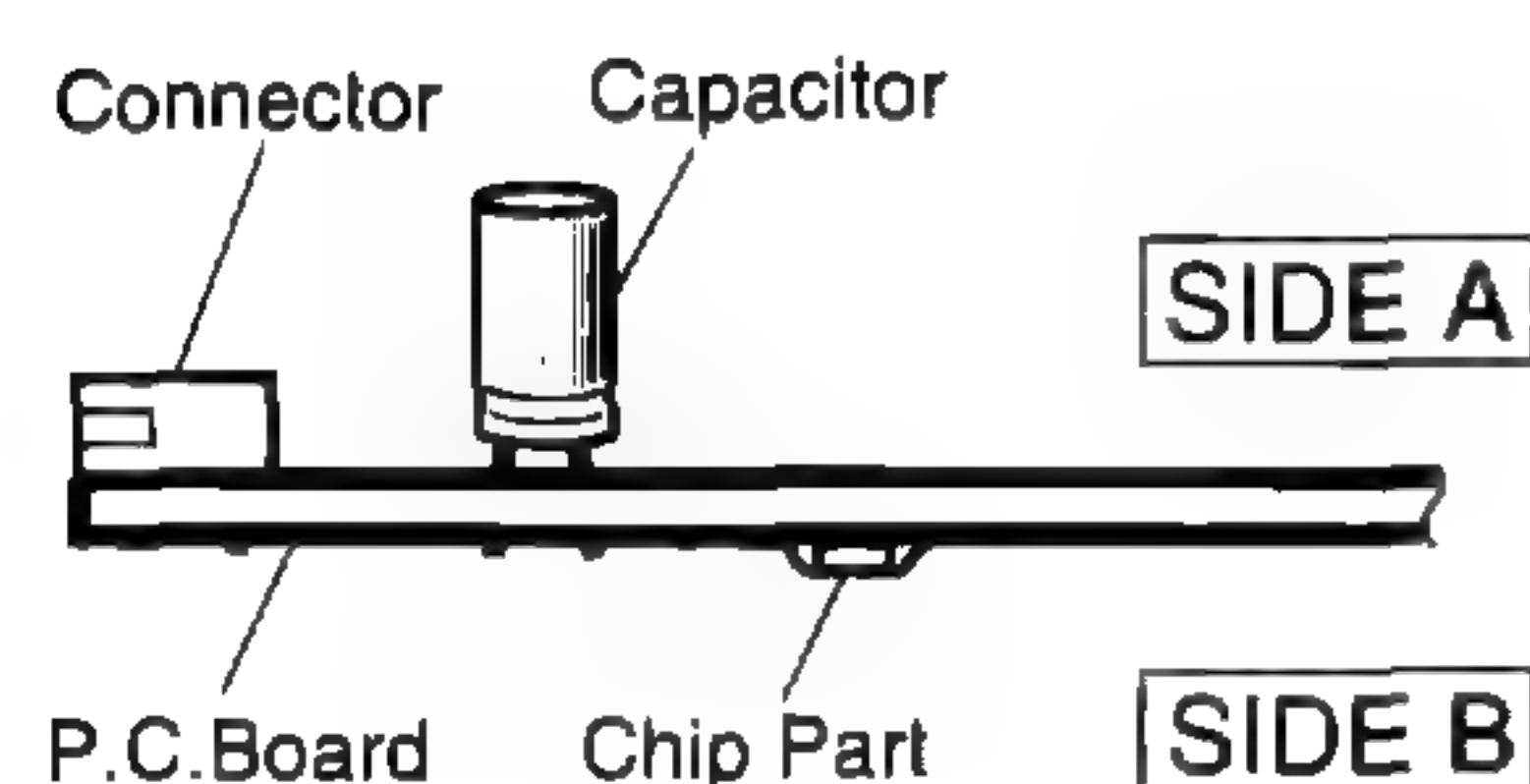
Fig. 20

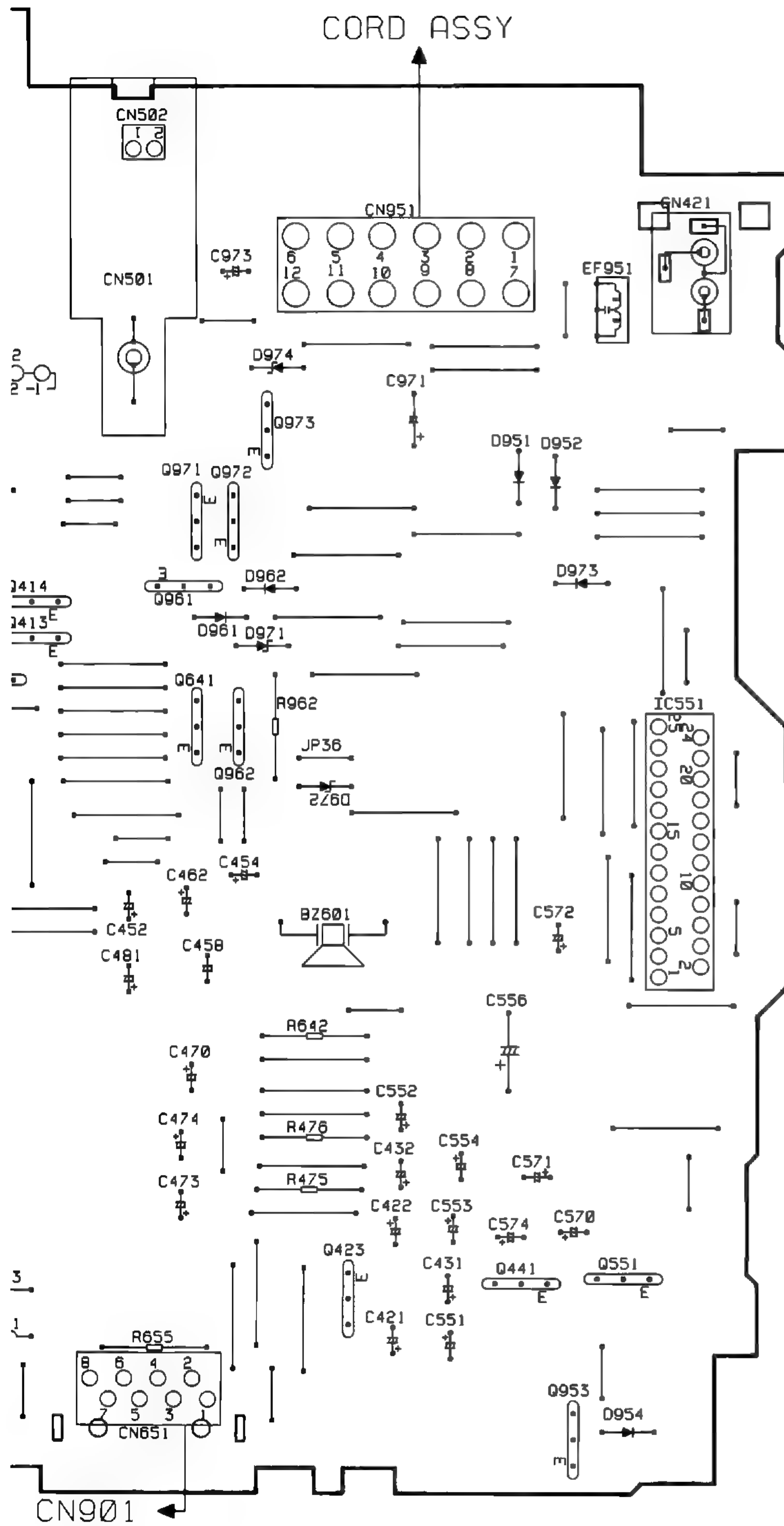
4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

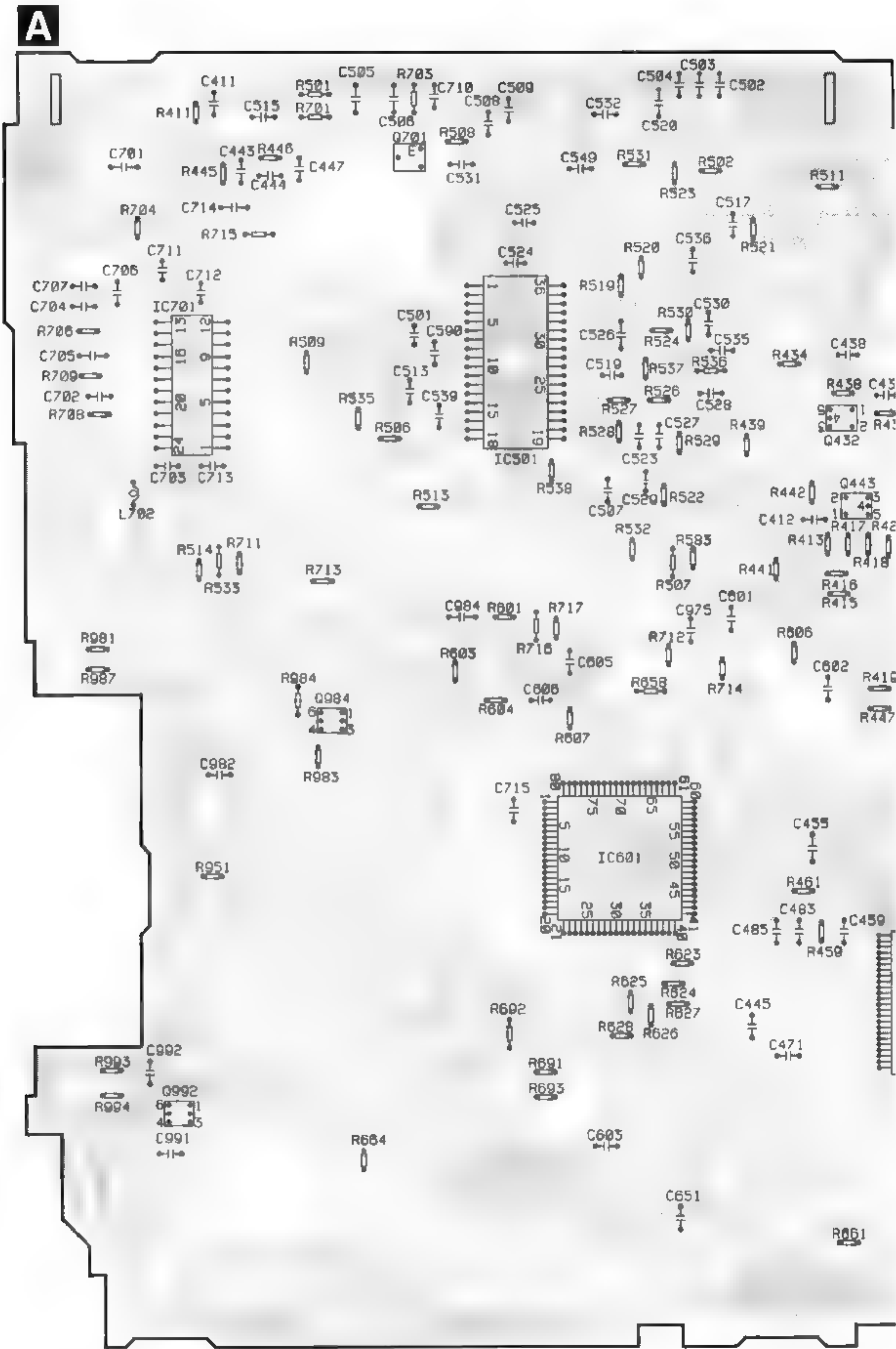
1. The parts mounted on this PCB include all necessary parts for several destination.
For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams

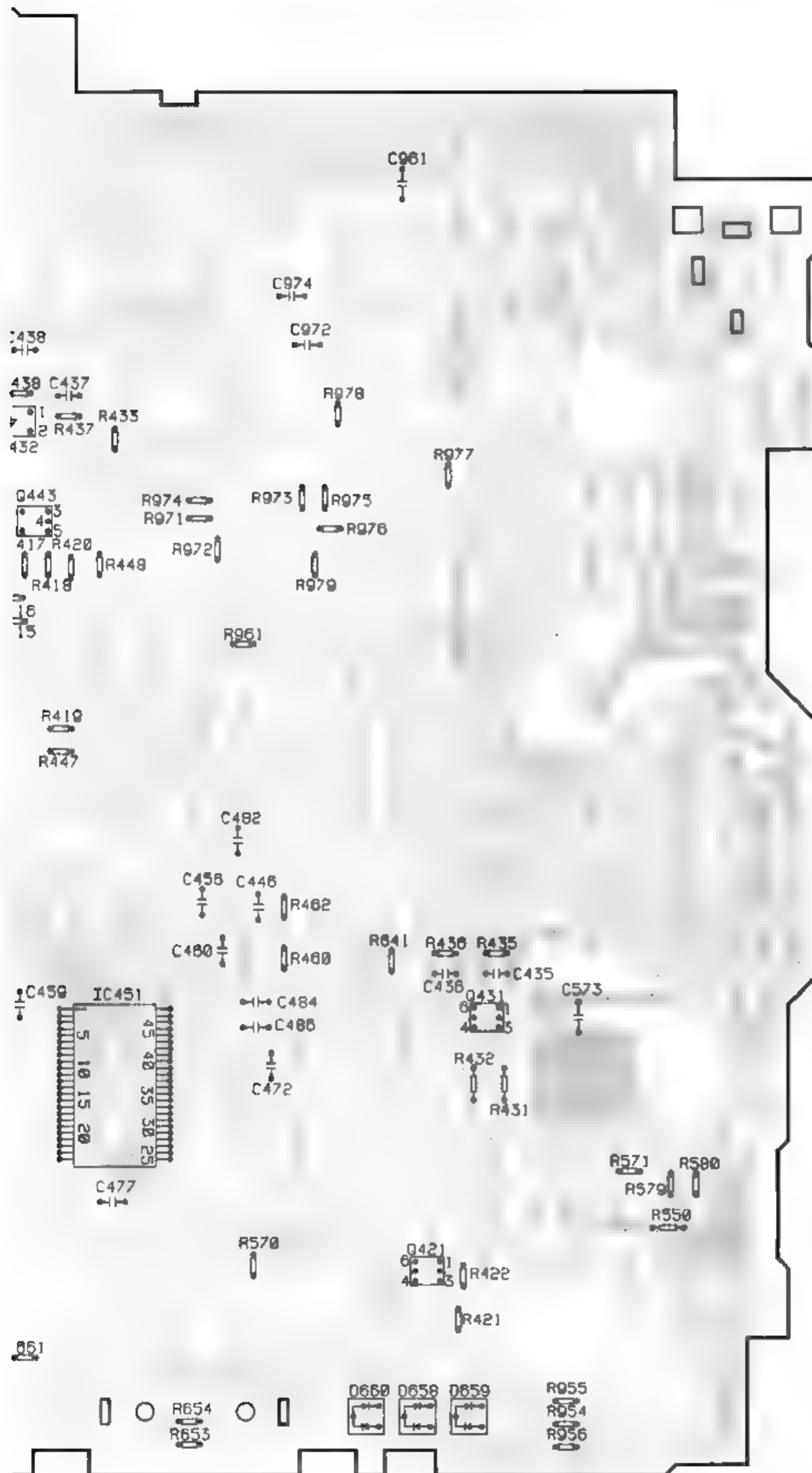


SIDE A

| | |
|-------|-----------------|
| ADJ | IC. Q |
| VR701 | Q501 |
| | Q502 |
| | Q703 Q973 |
| | Q971 Q972 |
| | Q445 |
| | Q414 |
| | Q961 |
| | Q413 |
| | Q901 |
| | Q411 |
| | Q903 IC602 Q641 |
| | IC551 |
| | Q962 |
| | Q902 |
| | Q951 |
| | Q952 |
| | Q991 |
| | Q423 |
| | Q651 Q441 Q551 |
| | Q654 Q653 |
| | Q953 |

Fig. 21





IC. Q

SIDE B

0701

IC701

IC501

Q432

Q443

0984

IC601

Q431
IC451

0092

0421

Fig. 22

DE



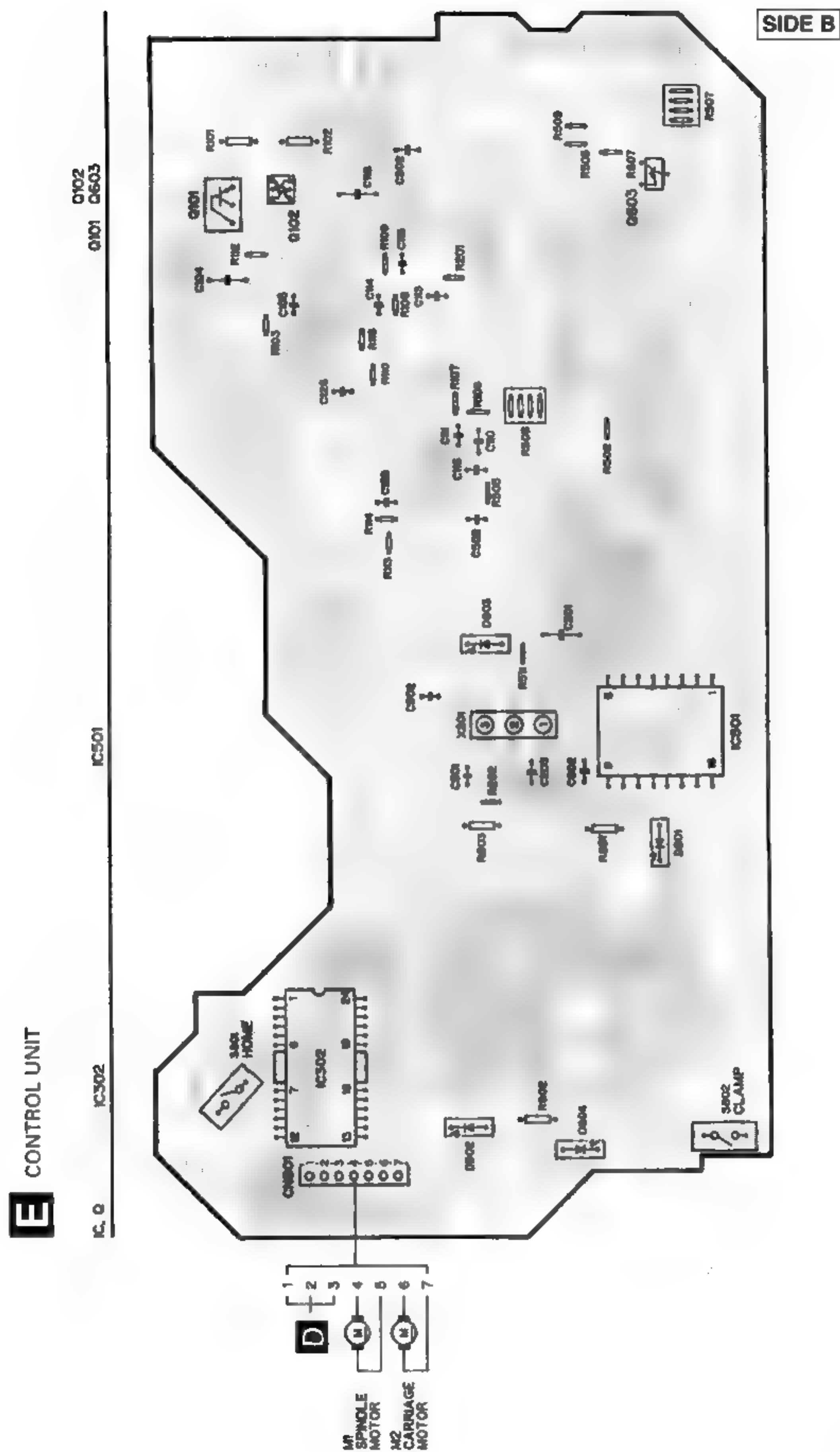


Fig. 24

B

Fig. 25

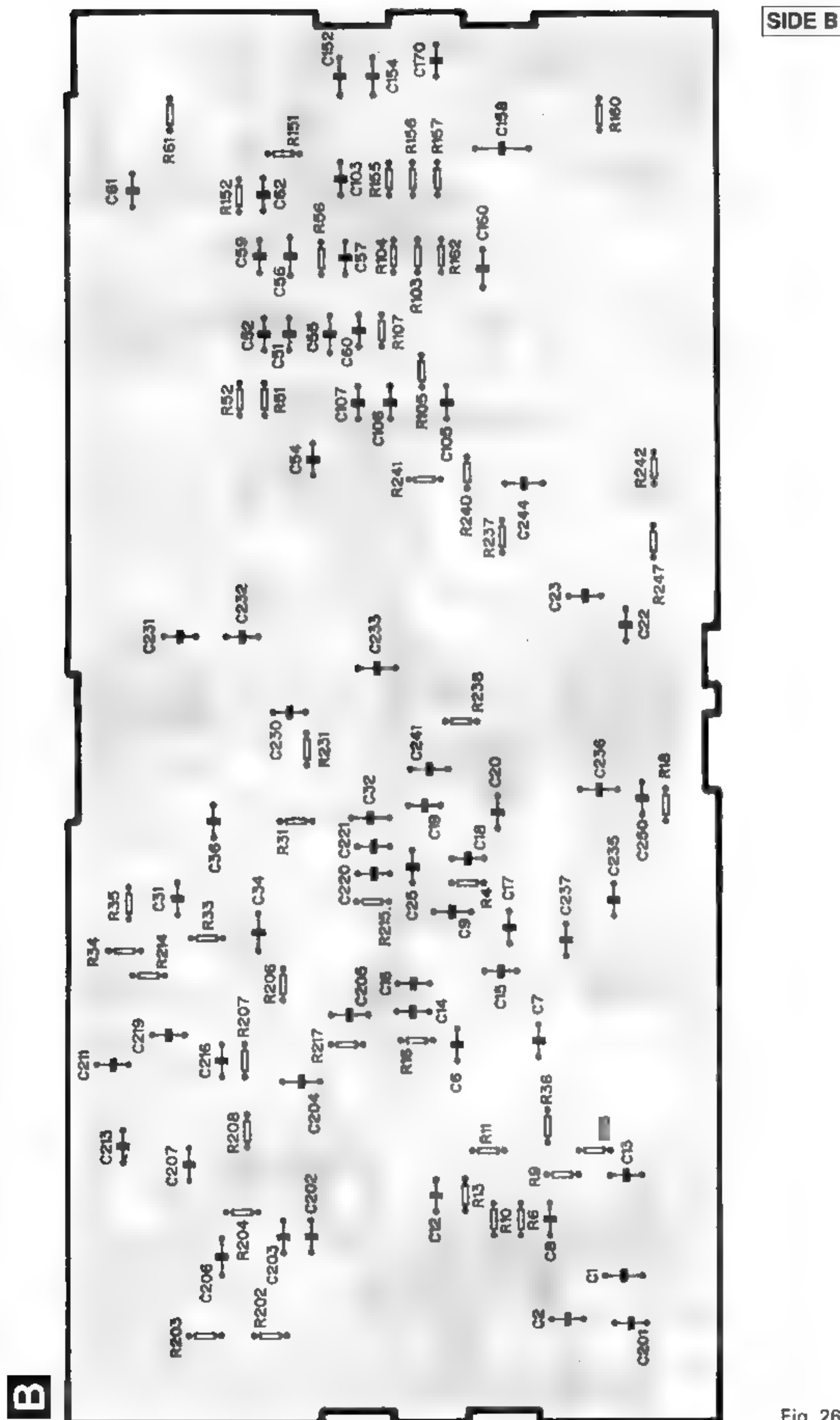


Fig. 26



4.4 KEYBOARD UNIT

SIDE A

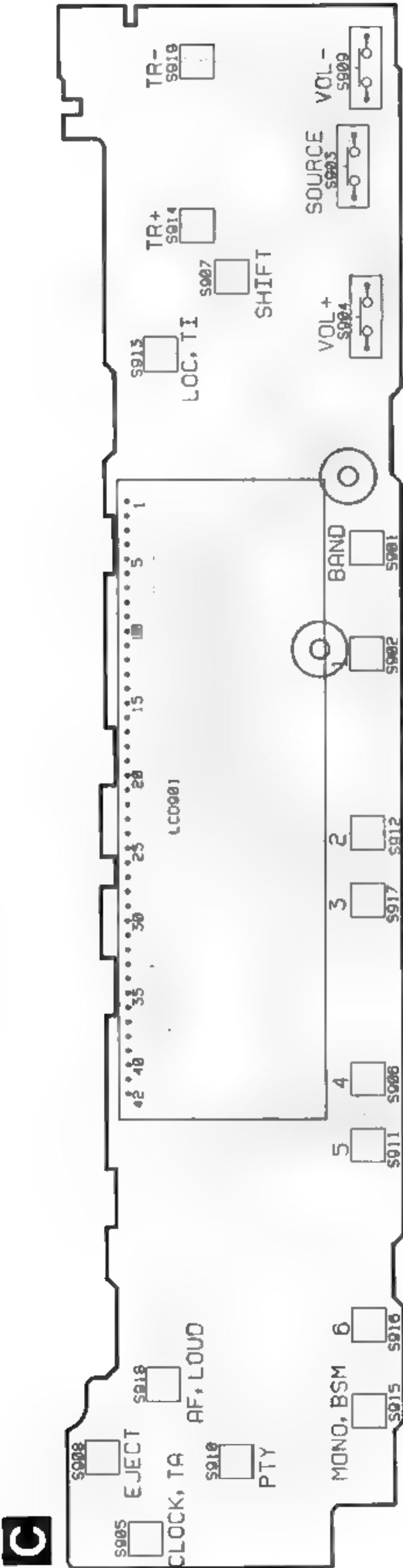


Fig. 27

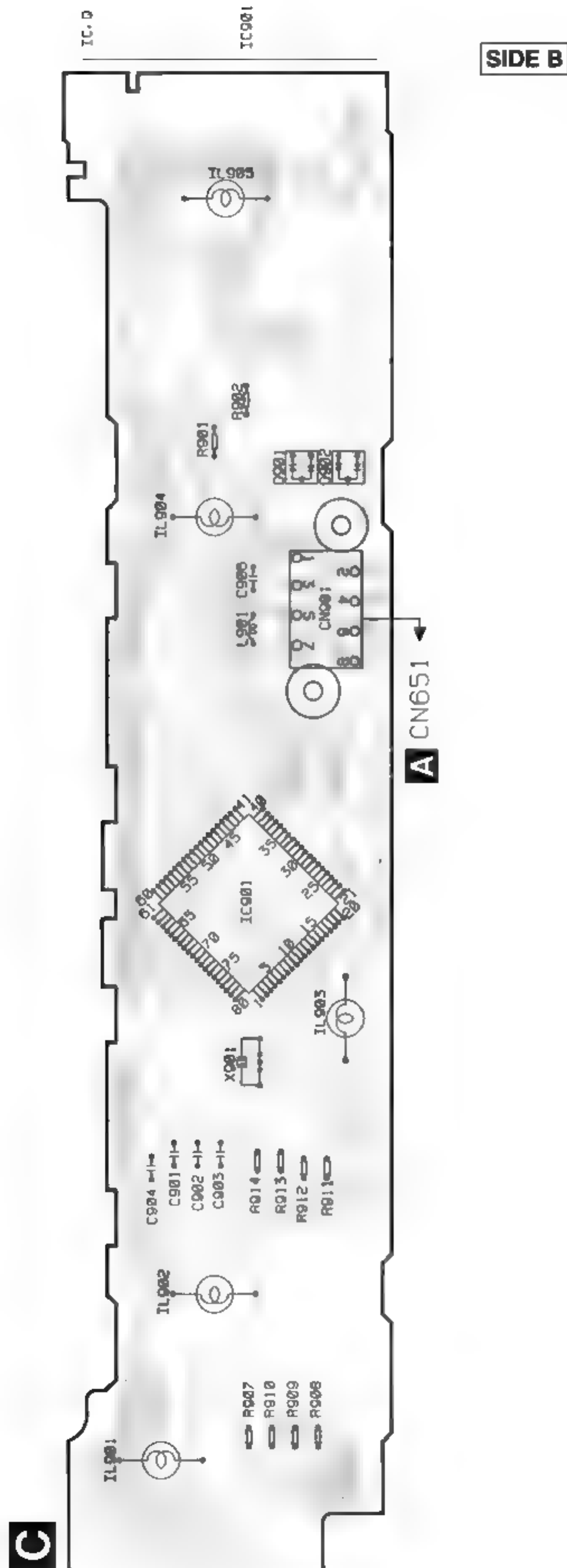


Fig. 28

5. ELECTRICAL PARTS LIST

(1)PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○ ○ ○ ○ J,RS1/○ ○ S○ ○ ○ ○ J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

| ====Circuit Symbol & No.==Part Name | | | Part No. | ====Circuit Symbol & No.==Part Name | | | Part No. |
|---|-----|-----------------------------|--------------|-------------------------------------|-----|--|-------------|
| <div><div>B</div><div>Unit Number : CWE1417(Except for DEH-436/X1M/ES, 236/X1M/ES) Unit Number : CWE1485(DEH-436/X1M/ES, 236/X1M/ES) Unit Name : FM/AM Tuner Unit</div></div> | | | | R | 7 | | RS1/16S123J |
| | | | | R | 8 | | RS1/16S332J |
| | | | | R | 9 | | RS1/16S473J |
| | | | | R | 10 | | RS1/16S223J |
| | | | | R | 11 | | RS1/16S124J |
| MISCELLANEOUS | | | | R | 13 | | RS1/16S563J |
| IC | 1 | IC | PA4023B | R | 15 | | RS1/16S271J |
| IC | 2 | IC | PA4024A | R | 16 | | RS1/16S104J |
| Q | 1 | Transistor | 2SC2412KLN | R | 17 | | RS1/16S332J |
| Q | 2 | Transistor | DTC124EU | R | 18 | | RS1/16S332J |
| Q | 3 | FET | 3SK263 | | | | |
| | | | | R | 31 | | RS1/16S470J |
| Q | 31 | Transistor | 2SC2412KLN | R | 32 | | RS1/16S822J |
| Q | 201 | FET | 2SK932 | R | 33 | | RS1/16S822J |
| Q | 202 | Transistor | 2SC2412KLN | R | 34 | | RS1/16S331J |
| Q | 203 | Transistor | DTC124EU | R | 35 | | RS1/16S331J |
| D | 1 | Diode | RD39JS | | | | |
| | | | | R | 51 | | RS1/16S271J |
| D | 2 | Diode | RD39JS | R | 52 | | RS1/16S560J |
| D | 4 | Diode | 1SV250 | R | 55 | | RS1/16S102J |
| D | 5 | Diode | KV1410-F1 | R | 56 | | RS1/16S823J |
| D | 6 | Diode | MA157 | R | 61 | | RS1/16S392J |
| D | 7 | Diode | KV1410-F1 | | | | |
| | | | | R | 62 | | RS1/16S273J |
| D | 8 | Diode | KV1410-F1 | R | 101 | | RS1/16S272J |
| D | 201 | Diode | MA157 | R | 102 | | RS1/16S682J |
| D | 202 | Diode | MA157 | R | 103 | | RS1/16S333J |
| D | 231 | Diode | SVC253 | R | 104 | | RS1/16S334J |
| L | 2 | Coil | CTC1108 | | | | |
| | | | | R | 105 | | RS1/16S683J |
| L | 3 | Inductor | LCTB2R2K2125 | R | 107 | | RS1/16S222J |
| L | 4 | Coil | CTC1108 | R | 151 | | RS1/16S222J |
| L | 5 | Coil | CTC1107 | R | 152 | | RS1/16S393J |
| L | 6 | Inductor | LCTBR15K1608 | R | 155 | | RS1/16S273J |
| | | (DEH-436/X1M/ES,236/X1M/ES) | | | | | |
| | | | | R | 156 | | RS1/16S243J |
| L | 51 | Ferri-Inductor | LAU150K | R | 157 | | RS1/16S203J |
| L | 201 | Ferri-Inductor | LAU4R7K | R | 160 | | RS1/16S222J |
| L | 202 | Ferri-Inductor | LAU330K | R | 161 | | RS1/16S563J |
| L | 203 | Inductor | CTF1287 | R | 162 | | RS1/16S105J |
| L | 208 | Inductor | LAU121K | | | | |
| | | | | R | 163 | | RS1/16S223J |
| L | 231 | Inductor | LCTA3R3J3225 | R | 202 | | RS1/16S223J |
| T | 31 | Coil | CTE1116 | R | 203 | | RS1/16S225J |
| T | 51 | Coil | CTC1136 | R | 204 | | RS1/16S103J |
| CF | 51 | Ceramic Filter | CTF1290 | R | 206 | | RS1/16S220J |
| CF | 52 | Ceramic Filter | CTF1290 | | | | |
| | | | | R | 207 | | RS1/16S101J |
| CF | 53 | Ceramic Filter | CTF1290 | R | 208 | | RS1/16S102J |
| CF | 232 | Ceramic Filter | CTF1348 | R | 209 | | RS1/16S471J |
| X | 151 | Resonator 920.5kHz | CSS1365 | R | 214 | | RS1/16S822J |
| X | 231 | Crystal Resonator 10.26MHz | CSS1111 | R | 215 | | RS1/16S822J |
| VR | 154 | Semi-fixed 150kΩ(B) | CCP1213 | | | | |
| | | | | R | 217 | | RS1/16S102J |
| RESISTORS | | | | R | 231 | | RS1/16S272J |
| R | 1 | | RS1/16S225J | R | 232 | | RS1/16S473J |
| R | 2 | | RS1/16S225J | R | 237 | | RS1/16S103J |
| R | 4 | | RS1/16S154J | R | 238 | | RS1/16S104J |
| R | 5 | | RS1/16S391J | | | | |
| R | 6 | | RS1/16S223J | | | | |

| ====Circuit Symbol & No.====Part Name | Part No. | ====Circuit Symbol & No.====Part Name | Part No. |
|---------------------------------------|--|---------------------------------------|--------------|
| R 239 | RS1/16S104J | C 160 | CKSQYB104K16 |
| R 240 | RS1/16S332J | C 161 | CKSQYB104K16 |
| R 241 | RS1/16S202J | C 162 | CEJA3R3M50 |
| R 243 | RS1/16S183J | C 163 | CKSRYB102K50 |
| R 244 | RS1/16S392J | C 170 | CCSRCH100D50 |
| R 247 | RS1/16S123J | C 201 | CCSRCH471J50 |
| CAPACITORS | | C 202 | CCSRCH100D50 |
| C 1 | CCSQCH6R0D50 | C 203 | CKSRYB332K50 |
| C 2 | CCSRCK2R0C50 | C 204 | CKSQYB473K16 |
| C 4 | CCSRCH820J50 | C 205 | CKSQYB473K16 |
| C 6 | CCSRCH820J50 | C 206 | CKSQYB104K16 |
| C 8 | CKSRYB103K25 | C 207 | CCSRCH560J50 |
| C 9 | CKSQYB104K16 | C 209 | CKSQYB104K16 |
| C 10 | CCSRCKR50C50 | C 211 | CCSRCH101J50 |
| C 11 | CEJA1R0M50 | C 212 | CEJA470M6R3 |
| C 12 | CKSRYB222K50 | C 213 | CKSRYB103K25 |
| C 13 | CKSRYB222K50 | C 216 | CCSRCH101J50 |
| C 14 | CCSRCH220J50 | C 217 | CEJA1R5M50 |
| C 15 | CCSRCH6R0D50 | C 219 | CCSRCH471J50 |
| C 16 | CCSRCH8R0D50 | C 220 | CKSRYB103K25 |
| C 17 | CKSRYB222K50 | C 230 | CKSRYB103K25 |
| C 18 | CKSRYB103K25 | C 231 | CCSRCH330J50 |
| C 19 | CKSRYB222K50 | C 232 | CCSRCH150J50 |
| C 20 | CKSRYB222K50 | C 233 | CKSQYB104K16 |
| C 21 | CEJA100M16 | C 234 | CEJA330M10 |
| C 22 | CCSRTH9R0D50 | C 235 | CKSRYB332K50 |
| C 23 | CCSRTH120J50 | C 236 | CKSQYB473K16 |
| C 24 | CCSRCH471J50 | C 237 | CCSRCH120J50 |
| C 25 | CKSRYB103K25 | C 239 | CKSRYB472K50 |
| C 26 | CCSRCH101J50 | C 240 | CEJAR47M50 |
| C 31 | (Except for DEH-436/X1M/ES,236/X1M/ES) CKSRYB103K25 | C 241 | CKSQYB104K16 |
| C 32 | CKSQYB472K50 | C 242 | CEJAR47M50 |
| C 33 | CCSRCH5R0C50 | C 243 | CEJAR33M50 |
| C 34 | CKSQYB104K16 | C 244 | CKSQYB473K16 |
| C 36 | CCSRRH201J50 | C 245 | CKSRYB333K16 |
| C 51 | CKSRYB223K25 | C 246 | CKSQYB473K16 |
| C 52 | CKSRYB103K25 | C 250 | CCSRCH471J50 |
| C 54 | CCSRCH470J50 | | |
| C 55 | CKSQYB223K25 | | |
| C 56 | CKSQYB104K16 | | |
| C 57 | CKSRYB472K50 | | |
| C 58 | CEJA330M10 | | |
| C 59 | CKSRYB103K25 | | |
| C 60 | CKSRYB102K50 | | |
| C 61 | CCSRCH270J50 | | |
| C 62 | CKSRYB103K25 | | |
| C 63 | CEJAR22M50 | | |
| C 101 | CEJANP100M10 | | |
| C 102 | CKSRYB182K50 | | |
| C 103 | CKSRYB682K25 | | |
| C 104 | CEJA2R2M50 | | |
| C 105 | CKSRYB103K25 | | |
| C 106 | CCSRCH151J50 | | |
| C 107 | CKSRYB103K25 | | |
| C 151 | CKSRYB472K50 | | |
| C 152 | CKSQYB104K16 | | |
| C 153 | CEJA3R3M50 | | |
| C 154 | CKSQYB104K16 | | |
| C 157 | CEJA3R3M50 | | |
| C 158 | CKSYB474K16 | | |
| C 159 | CEJA220M6R3 | | |

E

Unit Number : CWX1889
Unit Name : Control Unit

MISCELLANEOUS

| | | |
|--------|----------------------------|------------|
| IC 101 | IC | UPC2572GS |
| IC 201 | IC | UPD63702GF |
| IC 301 | IC | XLA6997FP |
| IC 302 | IC | XLA6285FP |
| IC 601 | IC | TA2063F |
| IC 701 | IC | PQ05TZ51 |
| Q 101 | Transistor | 2SD1664 |
| Q 102 | Transistor | UMD2N |
| Q 601 | Transistor | 2SD1781K |
| Q 602 | Transistor | 2SD1781K |
| Q 603 | Transistor | 2SB709A |
| D 601 | Diode | MA151WA |
| D 701 | Diode | 1SR154-400 |
| D 702 | Diode | 1SR154-400 |
| D 801 | | CL200IRX |
| D 802 | | CL200IRX |
| X 201 | Ceramic Resonator 16.93MHz | CSS1363 |
| S 801 | Switch(Home) | CSN1028 |
| S 802 | Switch(Clamp) | CSN1028 |

| ====Circuit Symbol & No.===Part Name | Part No. | ====Circuit Symbol & No.===Part Name | Part No. |
|--------------------------------------|--------------|--|-----------------------|
| RESISTORS | | | |
| R 101 | RS1/8S100J | C 303 | CEV470M16 |
| R 102 | RS1/8S120J | C 304 | CKSRYB103K25 |
| R 103 | RS1/16S102J | C 305 | CKSRYB103K25 |
| R 104 | RS1/16S822J | C 306 | CKSRYB103K25 |
| R 105 | RS1/16S682J | C 502 | CKSRYB471K50 |
| R 106 | RS1/16S183J | C 601 | CEV101M6R3 |
| R 107 | RS1/16S822J | C 602 | CKSQYB104K16 |
| R 108 | RS1/16S333J | C 603 | CEV4R7M35 |
| R 109 | RS1/16S683J | C 604 | CEV4R7M35 |
| R 110 | RS1/16S134J | C 605 | CKSRYB152K50 |
| R 111 | RS1/16S273J | C 606 | CKSRYB152K50 |
| R 112 | RS1/16S222J | C 607 | CEV220M6R3 |
| R 113 | RS1/16S103J | C 701 | CCH1233 |
| R 114 | RS1/16S103J | C 702 | CKSYB334K16 |
| R 115 | RS1/16S102J | C 703 | CEV101M6R3 |
| R 116 | RS1/16S163J | C 901 | CCSRCH471J50 |
| R 117 | RS1/16S163J | C 902 | CCSRCH271J50 |
| R 201 | RS1/16S104J | C 903 | CCSRCH471J50 |
| R 202 | RS1/16S473J | C 904 | CCSRCH101J50 |
| R 304 | RS1/16S0R0J | <div><div>A</div><div>Unit Number : CWM4964(DEH-48/X1M/UC) Unit Number : CWM4965(DEH-435/X1M/UC) Unit Number : CWM4966(DEH-43/X1M/UC) Unit Number : CWM4967(DEH-436/X1M/ES) Unit Number : CWM4968(DEH-235/X1M/UC) Unit Number : CWM4969(DEH-236/X1M/ES) Unit Name : Tuner Amp Unit</div></div> | |
| R 501 | RS1/16S0R0J | | |
| R 505 | RS1/16S102J | | |
| R 507 | RA4C102J | | |
| R 508 | RA4C681J | | |
| R 510 | RS1/10S0R0J | MISCELLANEOUS | |
| R 601 | RS1/16S102J | IC 451 | IC |
| R 602 | RS1/16S102J | IC 501 | IC |
| R 603 | RS1/16S223J | IC 551 | IC |
| R 604 | RS1/16S223J | IC 601 | IC |
| R 605 | RS1/16S162J | IC 602 | IC |
| R 606 | RS1/16S162J | Q 421 | See Contrast table(2) |
| R 607 | RS1/16S103J | Q 423 | See Contrast table(2) |
| R 801 | RS1/8S751J | Q 431 | Transistor |
| R 802 | RS1/8S751J | Q 432 | See Contrast table(2) |
| CAPACITORS | | Q 441 | Transistor |
| C 101 | CEV101M6R3 | Q 501 | Transistor |
| C 102 | CKSQYB104K16 | Q 502 | Transistor |
| C 103 | CEV470M6R3 | Q 551 | Transistor |
| C 104 | CKSYB334K16 | Q 641 | See Contrast table(2) |
| C 105 | CCSRCH330J50 | Q 651 | Transistor |
| C 106 | CKSRYB103K25 | Q 653 | Transistor |
| C 107 | CEV4R7M35 | Q 654 | Transistor |
| C 108 | CKSQYB273K50 | Q 951 | Transistor |
| C 109 | CCSRCH101J50 | Q 952 | Transistor |
| C 110 | CKSQYB104K16 | Q 961 | Transistor |
| C 111 | CKSRYB332K50 | Q 962 | Transistor |
| C 112 | CKSQYB473K16 | Q 971 | Transistor |
| C 113 | CKSRYB103K25 | Q 972 | Transistor |
| C 114 | CKSRYB391K50 | Q 973 | Transistor |
| C 115 | CCSRCH121J50 | Q 981 | Transistor |
| C 116 | CKSRYB682K25 | Q 982 | Transistor |
| C 117 | CKSRYB333K16 | Q 983 | Transistor |
| C 118 | CKSYB334K16 | Q 984 | Transistor |
| C 119 | CKSYB334K16 | Q 991 | Transistor |
| C 120 | CKSYB334K16 | Q 992 | Transistor |
| C 121 | CKSYB334K16 | D 503 | Diode |
| C 122 | CKSQYB104K16 | D 504 | Diode |
| C 123 | CKSRYB472K50 | D 601 | See Contrast table(2) |
| C 124 | CKSQYB104K16 | D 657 | Diode |
| C 125 | CCSRCH6R0D50 | D 658 | See Contrast table(2) |
| C 126 | CKSRYB153K25 | D 659 | See Contrast table(2) |
| C 127 | CCSRCH102J25 | D 660 | See Contrast table(2) |
| C 201 | CKSYB334K16 | D 951 | Diode |
| C 202 | CKSQYB104K16 | D 952 | Diode |
| C 203 | CKSQYB104K16 | D 961 | Diode |

| ====Circuit Symbol & No.===Part Name | | | Part No. | ====Circuit Symbol & No.===Part Name | | | Part No. |
|--------------------------------------|-----|----------------------------|-----------------------|--------------------------------------|-----|-----------------------|---------------|
| D | 962 | Diode | 1SR139-200 | R | 532 | | RS1/10S224J |
| D | 971 | Diode | HZS6L(C3) | R | 533 | | RS1/8S0R0J |
| D | 972 | Diode | HZS7L(C2) | R | 534 | | RD1/4PU102J |
| D | 973 | Diode | 1SR139-200 | R | 535 | See Contrast table(2) | |
| D | 974 | Diode | HZS6L(B1) | R | 536 | | RS1/8S102J |
| D | 981 | Diode | HZS9L(B3) | R | 537 | | RS1/10S0R0J |
| D | 992 | Diode | HZS9L(B1) | R | 550 | | RS1/8S0R0J |
| L | 501 | Ferri-Inductor | LAU220K | R | 570 | | RS1/10S103J |
| L | 502 | Ferri-Inductor | LAU2R2K | R | 571 | | RS1/10S103J |
| L | 503 | Ferri-Inductor | LAU2R2K | R | 579 | | RS1/10S331J |
| L | 601 | Ferri-Inductor | LAU2R2K | R | 580 | | RS1/10S103J |
| L | 602 | Ferri-Inductor | LAU101K | R | 581 | | RD1/4PU102J |
| L | 651 | Ferri-Inductor | LAU101K | R | 582 | | RD1/4PU102J |
| TH | 601 | Thermistor | CCX1031 | R | 583 | | RS1/10S562J |
| X | 501 | Crystal Resonator 7.200MHz | CSS1379 | R | 584 | | RD1/4PU102J |
| X | 601 | Ceramic Resonator 4.194MHz | CSS1047 | R | 601 | | RN1/10SE2202D |
| BZ | 601 | See Contrast table(2) | | R | 602 | See Contrast table(2) | |
| | | FM/AM Tuner Unit | See Contrast table(2) | R | 603 | | |
| RESISTORS | | | | R | 604 | | RS1/10S393J |
| | | | | R | 605 | | RD1/4PU102J |
| R | 421 | See Contrast table(2) | | R | 606 | | RS1/10S124J |
| R | 422 | | RS1/10S104J | R | 607 | | RS1/10S473J |
| R | 431 | | RS1/8S471J | R | 621 | | RD1/4PU473J |
| R | 432 | | RS1/8S471J | R | 624 | | RS1/10S0R0J |
| R | 433 | | RS1/10S102J | R | 626 | See Contrast table(2) | |
| R | 434 | | RS1/10S102J | R | 627 | | |
| R | 435 | | RS1/10S223J | R | 628 | See Contrast table(2) | RS1/10S473J |
| R | 436 | | RS1/10S223J | R | 638 | | RD1/4PU473J |
| R | 437 | | RS1/10S223J | R | 639 | | RD1/4PU473J |
| R | 438 | | RS1/10S223J | R | 641 | See Contrast table(2) | |
| R | 441 | | RS1/10S0R0J | R | 642 | | |
| R | 442 | | RS1/10S0R0J | R | 651 | | RD1/4PU472J |
| R | 443 | | RD1/4PU222J | R | 652 | | RD1/4PU472J |
| R | 444 | | RD1/4PU222J | R | 653 | | RS1/10S222J |
| R | 445 | | RS1/10S162J | R | 654 | | RS1/10S222J |
| R | 446 | | RS1/10S162J | R | 655 | | RD1/4PU222J |
| R | 459 | | RS1/10S272J | R | 656 | | RD1/4PU472J |
| R | 460 | | RS1/10S272J | R | 657 | | RD1/4PU222J |
| R | 461 | | RS1/10S151J | R | 658 | | RS1/8S222J |
| R | 462 | | RS1/10S151J | R | 659 | | RD1/4PU473J |
| R | 475 | | RD1/4PU471J | R | 661 | | RS1/10S1R0J |
| R | 476 | | RD1/4PU471J | R | 664 | | RS1/10S472J |
| R | 501 | | RS1/8S102J | R | 665 | | RD1/4PU102J |
| R | 502 | | RS1/10S222J | R | 668 | | RD1/4PU222J |
| R | 503 | | RD1/4PU472J | R | 681 | | RD1/4PU222J |
| R | 504 | | RD1/4PU223J | R | 682 | | RD1/4PU222J |
| R | 506 | See Contrast table(2) | | R | 683 | | RD1/4PU222J |
| R | 507 | | RS1/8S473J | R | 688 | | RD1/4PU681J |
| R | 508 | | RS1/10S102J | R | 691 | | RS1/10S102J |
| R | 509 | | RS1/10S472J | R | 692 | | RS1/8S102J |
| R | 511 | | RS1/10S222J | R | 693 | | RS1/10S102J |
| R | 513 | | RS1/10S472J | R | 951 | | RS1/10S472J |
| R | 514 | | RS1/10S473J | R | 952 | | RD1/4PU331J |
| R | 515 | | RD1/4PU681J | R | 953 | | RD1/4PU331J |
| R | 516 | | RD1/4PU681J | R | 961 | | RS1/10S472J |
| R | 517 | | RD1/4PU101J | R | 962 | | RD1/2PM561J |
| R | 518 | | RD1/4PU681J | R | 971 | | RS1/10S473J |
| R | 519 | | RS1/10S392J | R | 972 | | RS1/10S103J |
| R | 520 | | RS1/10S392J | R | 973 | | RS1/10S473J |
| R | 521 | | RS1/10S152J | R | 974 | | RS1/10S473J |
| R | 522 | | RS1/10S682J | R | 975 | | RS1/10S103J |
| R | 523 | | RS1/10S103J | R | 976 | | RS1/10S473J |
| R | 524 | | RS1/10S561J | R | 977 | | RS1/10S101J |
| R | 525 | | RD1/4PU272J | R | 978 | | RS1/10S472J |
| R | 526 | | RS1/10S472J | R | 979 | | RS1/10S472J |
| R | 527 | | RS1/10S682J | R | 981 | | RS1/10S1R0J |
| R | 528 | | RS1/10S472J | R | 982 | | RD1/4PU471J |
| R | 529 | | RS1/10S681J | R | 983 | | RS1/10S472J |
| R | 530 | | RS1/10S222J | R | 984 | | RS1/8S472J |
| R | 531 | | RS1/10S103J | R | 985 | | RD1/4PU102J |

DEH-48,435,43,436,235,236

| ====Circuit Symbol & No.====Part Name | | Part No. |
|---------------------------------------|-----|--------------|
| R | 986 | RD1/4PU102J |
| R | 987 | RS1/10S221J |
| R | 991 | RD1/4PU221J |
| R | 992 | RD1/4PU221J |
| R | 993 | RS1/10S472J |
| R | 994 | RS1/10S122J |
| CAPACITORS | | |
| C | 421 | CEJA3R3M50 |
| C | 422 | CEJA3R3M50 |
| C | 431 | CEJA100M16 |
| C | 432 | CEJA100M16 |
| C | 433 | CEJA100M16 |
| C | 434 | CEJA100M16 |
| C | 435 | CCSQCH220J50 |
| C | 436 | CCSQCH220J50 |
| C | 437 | CCSQCH220J50 |
| C | 438 | CCSQCH220J50 |
| C | 443 | CKSQYB473K50 |
| C | 444 | CKSQYB473K50 |
| C | 445 | CKSQYB102K50 |
| C | 446 | CKSQYB102K50 |
| C | 447 | CKSQYB102K50 |
| C | 451 | CEJA2R2M50 |
| C | 452 | CEJA2R2M50 |
| C | 453 | CEJA4R7M35 |
| C | 454 | CEJA4R7M35 |
| C | 455 | CKSYB104K50 |
| C | 456 | CKSQYB104K50 |
| C | 457 | CEJANP100M16 |
| C | 458 | CEJANP100M16 |
| C | 459 | CKSQYB822K50 |
| C | 460 | CKSQYB822K50 |
| C | 461 | CEJA1R0M50 |
| C | 462 | CEJA1R0M50 |
| C | 469 | CEJA2R2M50 |
| C | 470 | CEJA2R2M50 |
| C | 471 | CKSQYB333K50 |
| C | 472 | CKSQYB333K50 |
| C | 473 | CEJA220M6R3 |
| C | 474 | CEJA2R2M50 |
| C | 477 | CKSQYB104K50 |
| C | 481 | CEJA470M10 |
| C | 482 | CKSQYB104K50 |
| C | 483 | CKSQYB183K50 |
| C | 484 | CKSQYB183K50 |
| C | 485 | CKSQYB102K50 |
| C | 486 | CKSQYB102K50 |
| C | 501 | CKSQYB103K50 |
| C | 502 | CKSQYB223K50 |
| C | 503 | CKSQYB223K50 |
| C | 504 | CKSQYB473K50 |
| C | 505 | CCSCH101J50 |
| C | 506 | CKSYB103K50 |
| C | 507 | CKSQYB102K50 |
| C | 508 | CKSQYB103K50 |
| C | 509 | CKSQYB223K50 |
| C | 510 | CEJA220M10 |
| C | 512 | CEJA220M10 |
| C | 513 | CKSQYB102K50 |
| C | 515 | CKSQYB223K50 |
| C | 516 | CCH1250 |
| C | 517 | CKSQYB103K50 |
| C | 518 | CCH1250 |
| C | 519 | CKSQYB103K50 |
| C | 520 | CKLSR473K16 |
| C | 522 | CEJA220M10 |
| C | 523 | CKSQYB104K50 |

| ====Circuit Symbol & No.====Part Name | | Part No. |
|---------------------------------------|-----|--------------|
| C | 524 | CCSQCH150J50 |
| C | 525 | CCSQCH150J50 |
| C | 526 | CKSYB332K50 |
| C | 527 | CKSQYB103K50 |
| C | 529 | CKSQYB103K50 |
| C | 530 | CKSQYB103K50 |
| C | 531 | CCSQCH101J50 |
| C | 532 | CKSQYB103K50 |
| C | 535 | CKSQYB223K50 |
| C | 536 | CKSQYB103K50 |
| C | 539 | CKSQYB473K50 |
| C | 551 | CEJAR22M50 |
| C | 552 | CEJAR22M50 |
| C | 553 | CEJAR22M50 |
| C | 554 | CEJAR22M50 |
| C | 556 | CCH1150 |
| C | 570 | CEJA100M16 |
| C | 571 | CEJA330M10 |
| C | 572 | CEJA1R0M50 |
| C | 573 | CKSYB104K50 |
| C | 574 | CEJA1R0M50 |
| C | 590 | CKSQYB103K50 |
| C | 591 | CEJA220M10 |
| C | 604 | CEJA4R7M35 |
| C | 605 | CKSQYB473K50 |
| C | 606 | CKSQYB473K50 |
| C | 607 | CEJA2R2M50 |
| C | 651 | CKSQYB473K50 |
| C | 652 | CEJA4R7M35 |
| C | 961 | CKSYB473K50 |
| C | 971 | CCH-114- |
| C | 972 | CKSQYB473K50 |
| C | 973 | CEJA101M10 |
| C | 974 | CKSQYB473K50 |
| C | 981 | CEAS331M10 |
| C | 982 | CKSQYB103K50 |
| C | 983 | CEJA101M16 |
| C | 984 | CKSYB473K50 |
| C | 991 | CKSQYB473K50 |
| C | 992 | CKSQYB102K50 |
| C | 993 | CEAL101M10 |



**Unit Number : CWM4973(Except for DEH-235/X1M/UC,
236/X1M/ES)**

Unit Number : CWM5203(DEH-235/X1M/UC,236/X1M/ES)
Unit Name : Keyboard Unit

MISCELLANEOUS

| | | | |
|-----|-----|---|--------------|
| IC | 901 | IC | PD6122A |
| D | 901 | Diode (Except for DEH-235/X1M/UC,236/X1M/ES) | DA204K |
| D | 902 | Diode (Except for DEH-235/X1M/UC,236/X1M/ES) | DA204K |
| L | 901 | Inductor | LCTB4R7K3216 |
| X | 901 | Ceramic Resonator 4.97MHz | CSS1312 |
| S | 903 | Switch | CSG-253 |
| S | 904 | Switch | CSG-253 |
| S | 909 | Switch | CSG-253 |
| IL | 901 | Lamp 14V 40mA | CEL1481 |
| IL | 902 | Lamp 14V 40mA | CEL1481 |
| IL | 903 | Lamp 14V 40mA | CEL1481 |
| IL | 904 | Lamp 14V 40mA | CEL1481 |
| IL | 905 | Lamp 14V 40mA | CEL1481 |
| LCD | 901 | LCD | CAW1330 |

| ====Circuit Symbol & No.====Part Name | Part No. |
|---------------------------------------|--------------|
| RESISTORS | |
| R 901 | RS1/8S222J |
| R 902 | RS1/8S222J |
| R 908 | RS1/10S0R0J |
| R 909 | RS1/10S0R0J |
| R 911 | RS1/10S471J |
| R 912 | RS1/10S471J |
| R 913 | RS1/10S471J |
| R 914 | RS1/10S471J |
| CAPACITORS | |
| C 901 | CKSQYB103K50 |
| C 902 | CKSQYB103K50 |
| C 903 | CKSQYB103K50 |
| C 904 | CKSQYB103K50 |
| C 906 | CKSQYB473K50 |

| ====Circuit Symbol & No.====Part Name | Part No. |
|--|-------------------------------------|
| <div><div>D</div><div>Unit Number : Unit Name : Detector PCB</div></div> | |
| Q 1 | Photo-transistor CPT-230S-X |
| Q 2 | Photo-transistor CPT-230S-X |
| Miscellaneous Parts List | |
| M 1 | Pickup Unit(SERVICE) CXX1230 |
| M 2 | Motor Unit(Spindle) CXA9407 |
| M 3 | CRG Motor Unit(Carriage) CXA9392 |
| | Load Motor Unit>Loading) CXA9391 |

(2) CONTRAST TABLE

DEH-48/X1M/UC, DEH-435/X1M/UC, DEH-43/X1M/UC, DEH-436/X1M/ES, DEH-235/X1M/UC and DEH-236/X1M/ES have the same construction except for the following:

| Circuit Symbol & No. | Part No. | | | | | |
|----------------------|---------------|----------------|---------------|----------------|----------------|----------------|
| | DEH-48/X1M/UC | DEH-435/X1M/UC | DEH-43/X1M/UC | DEH-436/X1M/ES | DEH-235/X1M/UC | DEH-236/X1M/ES |
| Q421 | IMH3A | IMH3A | Not used | Not used | Not used | Not used |
| Q423 | DTA124ES | DTA124ES | Not used | Not used | Not used | Not used |
| Q432 | FMG3A | Not used | Not used | Not used | Not used | Not used |
| Q641 | DTC114ES | Not used | Not used | Not used | Not used | Not used |
| D657 | HZS6L(B2) | HZS6L(B2) | HZS6L(B2) | HZS6L(B2) | Not used | Not used |
| D658,659,660 | MA153 | MA153 | MA153 | MA153 | Not used | Not used |
| FM/AM Tuner Unit | CWE1417 | CWE1417 | CWE1417 | CWE1485 | CWE1417 | CWE1485 |
| BZ601 | CPV1011 | Not used | Not used | Not used | Not used | Not used |
| R421,422 | RS1/10S104J | RS1/10S104J | Not used | Not used | Not used | Not used |
| R506 | RS1/10S0R0J | RS1/10S0R0J | RS1/10S0R0J | Not used | RS1/10S0R0J | Not used |
| R535 | Not used | Not used | Not used | RS1/10S182J | Not used | RS1/10S182J |
| R602 | RD1/4PU104J | RD1/4PU473J | RD1/4PU333J | RD1/4PU333J | RD1/4PU473J | RD1/4PU333J |
| R603 | RS1/10S333J | RS1/10S333J | RS1/10S473J | RS1/10S104J | RS1/10S333J | RS1/10S104J |
| R626 | RS1/10S0R0J | RS1/10S0R0J | RS1/10S0R0J | RS1/10S0R0J | Not used | Not used |
| R627 | Not used | Not used | Not used | Not used | RS1/10S473J | RS1/10S473J |
| R641 | RS1/10S202J | Not used | Not used | Not used | Not used | Not used |
| R642 | RD1/4PU102J | Not used | Not used | Not used | Not used | Not used |
| C421,422 | CEJA3R3M50 | CEJA3R3M50 | Not used | Not used | Not used | Not used |
| C433,434 | CEJA100M16 | Not used | Not used | Not used | Not used | Not used |
| C437,438 | CCSQCH220J50 | Not used | Not used | Not used | Not used | Not used |
| C651 | CKSQYB473K50 | CKSQYB473K50 | CKSQYB473K50 | CKSQYB473K50 | Not used | Not used |

6. ADJUSTMENT

6.1 TUNER ADJUSTMENT

● Connection Diagram

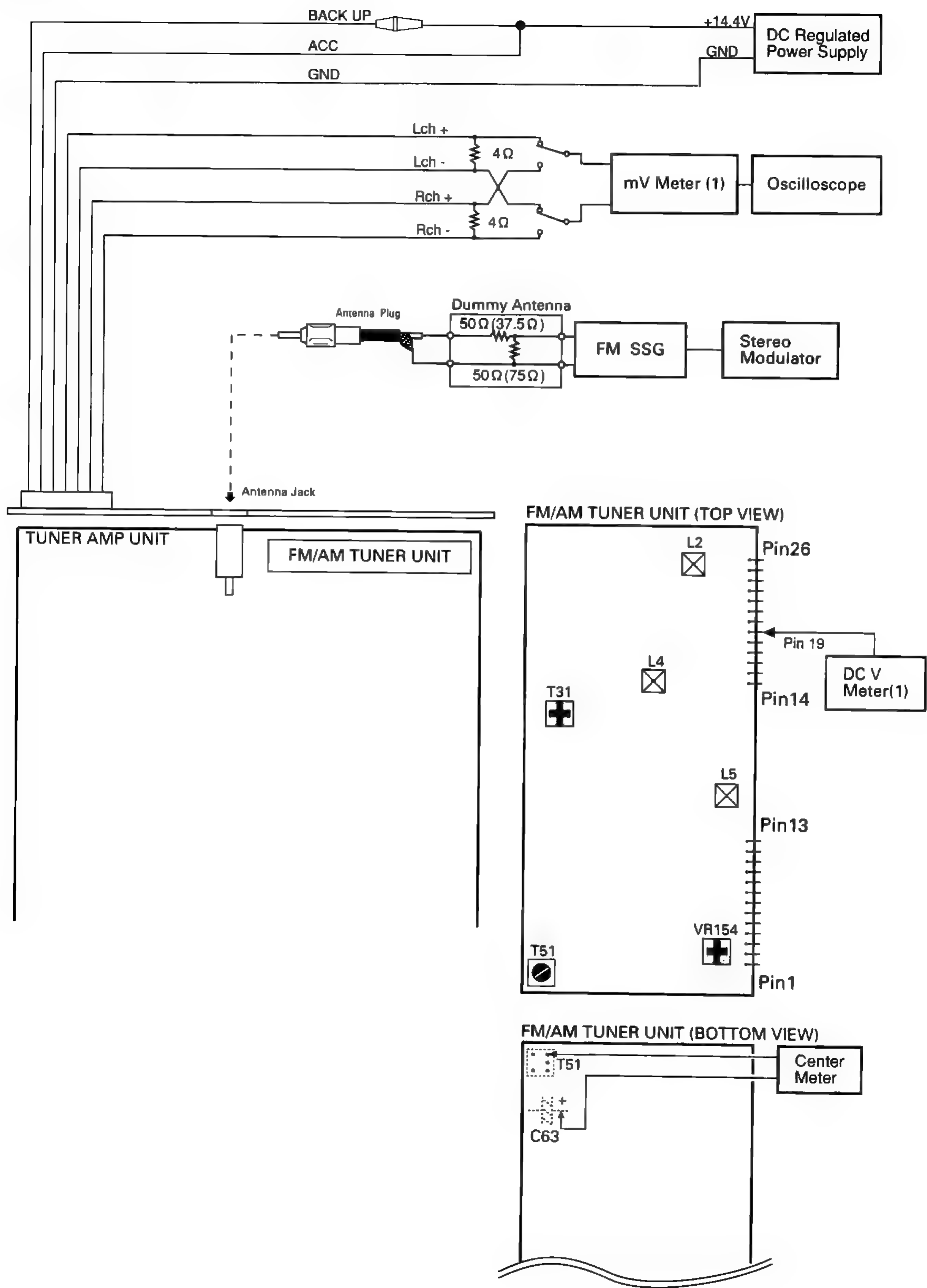


Fig. 29

FM ADJUSTMENT(DEH-48/X1M/UC, DEH-435/X1M/UC, DEH-43/X1M/UC, DEH-235/X1M/UC)

Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.)
S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

| | No. | FM SSG | | Displayed Frequency(MHz) | Adjustment Point | Adjustment Method (Switch Position) |
|----------|-----|----------------|------------|-----------------------------|---------------------|---|
| | | Frequency(MHz) | Level(dBf) | | | |
| TUN Volt | 1 | ..... | ..... | 107.9 | L5 | DC V Meter(1) : 6V |
| IF | 1 | 98.1 M | 60 | 98.1 | T51 | Center Meter : 0 |
| ANT Coil | 1 | 98.1 M | 5 | 98.1 | L2 | mV Meter(1) : Maximum |
| RF Coil | 1 | 98.1 M | 5 | 98.1 | L4 | mV Meter(1) : Maximum |
| IFT | 1 | 98.1 M | 5 | 98.1 | T31 | mV Meter(1) : Maximum (STEREO MODE) |
| ARC | 1 | 98.1 S | 39 | 98.1 | VR154 | mV Meter(1) : Separation 5dB (STEREO MODE) |

FM ADJUSTMENT(DEH-436/X1M/ES, DEH-236/X1M/ES)

| | No. | FM SSG | | Displayed Frequency(MHz) | Adjustment Point | Adjustment Method (Switch Position) |
|----------|-----|----------------|------------|-----------------------------|---------------------|---|
| | | Frequency(MHz) | Level(dBf) | | | |
| TUN Volt | 1 | ..... | ..... | 108.0 | L5 | DC V Meter(1) : 6V |
| IF | 1 | 98.1 M | 60 | 98.1 | T51 | Center Meter : 0 |
| ANT Coil | 1 | 98.1 M | 5 | 98.1 | L2 | mV Meter(1) : Maximum |
| RF Coil | 1 | 98.1 M | 5 | 98.1 | L4 | mV Meter(1) : Maximum |
| IFT | 1 | 98.1 M | 5 | 98.1 | T31 | mV Meter(1) : Maximum (STEREO MODE) |
| ARC | 1 | 98.1 S | 39 | 98.1 | VR154 | mV Meter(1) : Separation 5dB (STEREO MODE) |

6.2 CD ADJUSTMENT

1)Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND.

If REFO and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.

Do not connect the negative probe of the measuring equipment to REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO with the channel 2 negative probe connected to GND.

Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.

If by accident REFO comes in contact with GND, immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.
- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.
- Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.
- Test mode starting procedure
Switch ACC, back-up ON while pressing the 4 and 6 keys together.

- Test mode cancellation
Switch ACC, back-up OFF.

- Disc detection during loading and eject operations is performed by means of a photo transistor in this unit. Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.

*During PLAY, even if the eject button is pressed, the disc will not be ejected and the unit will remain in the PLAY mode.

*The unit will not load a disc.

When the unit malfunctions this way, either re-position the light source, move the unit or cover the photo transistor.

- When loading and unloading discs during adjustment procedures, always wait for the disc to be properly clamped or ejected before pressing another key. Otherwise, there is a risk of the actuator being destroyed.
- Turn power off when pressing the button TR+ or the button TR- key for focus search in the test mode. (Or else lens may stick and the actuator may be damaged.)
- SINGLE/4TRK/10TRK/32TRK will continue to operate even after the key is released. Tracking is closed the moment C-MOVE is released.
- JUMP MODE resets to SINGLE as soon as power is switched OFF.

6.3 CHECKING THE GRATING

● Checking the Grating After Changing the Pickup Unit

· **Note :**

Unlike previous CD mechanism modules the grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

· **Purpose :**

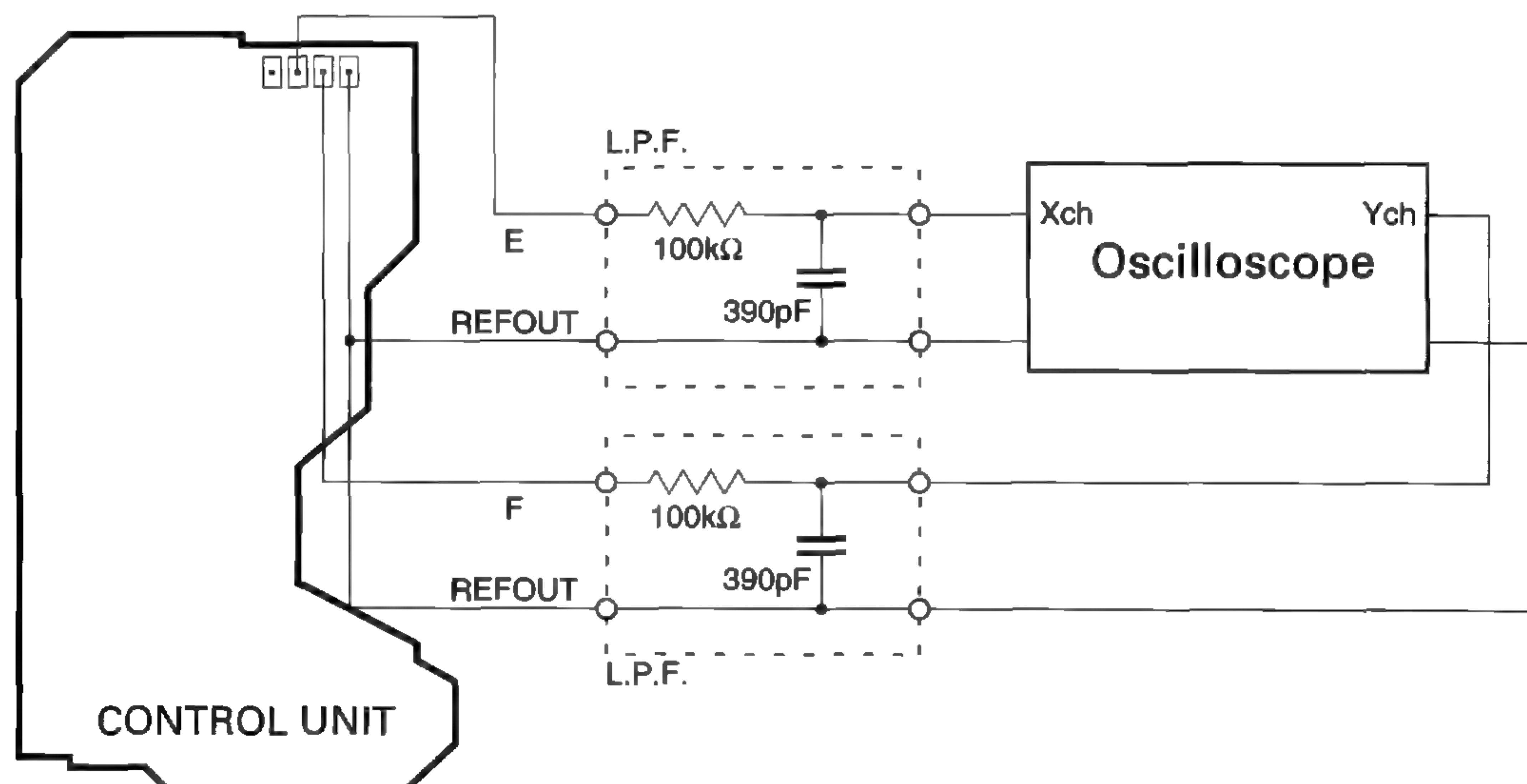
To check that the grating is within an acceptable range.

· **Symptoms of Mal-adjustment :**

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or track searching taking a long time, may appear.

· **Method :**

- | | |
|-----------------------|----------------------------|
| · Measuring Equipment | · Oscilloscope, Two L.P.F. |
| · Measuring Points | · E, F, REFOUT |
| · Disc | · ABEX TCD-784 |
| · Mode | · TEST MODE |



· **Checking Procedure**

1. In test mode, load the disc and switch the 5V regulator on.
2. Using the TR+ and TR- buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3 4 times. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75°. Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

· **Note**

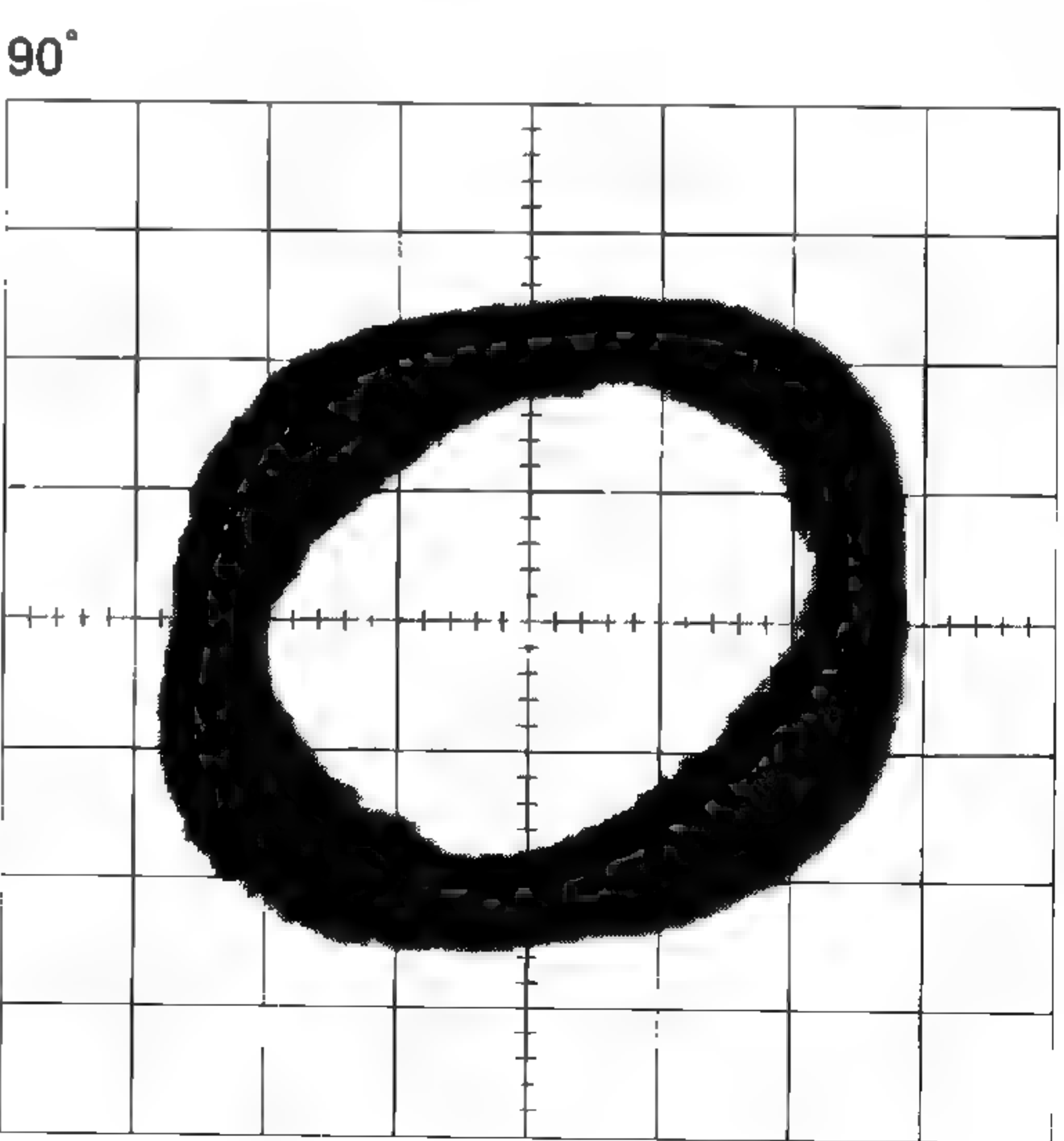
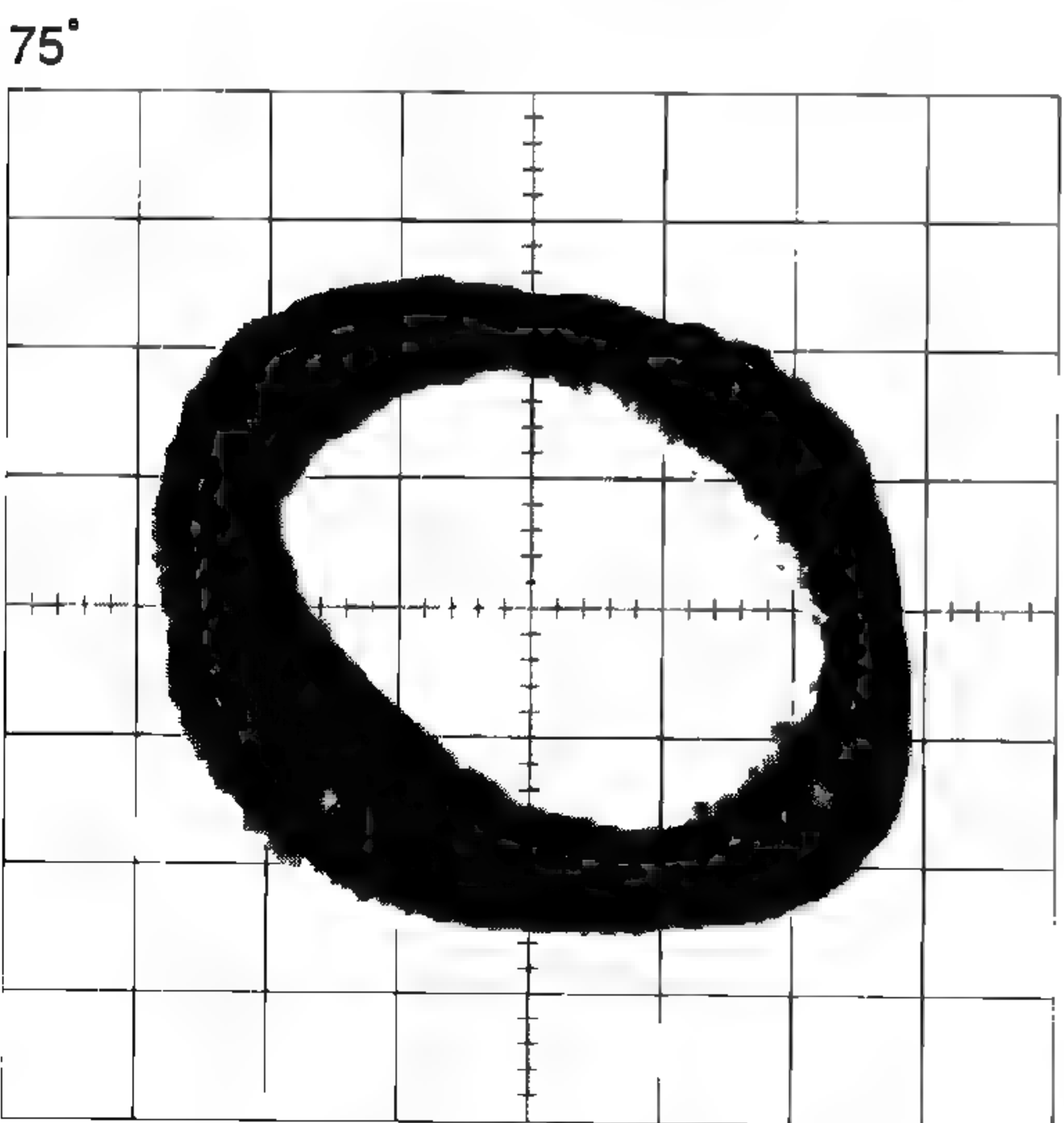
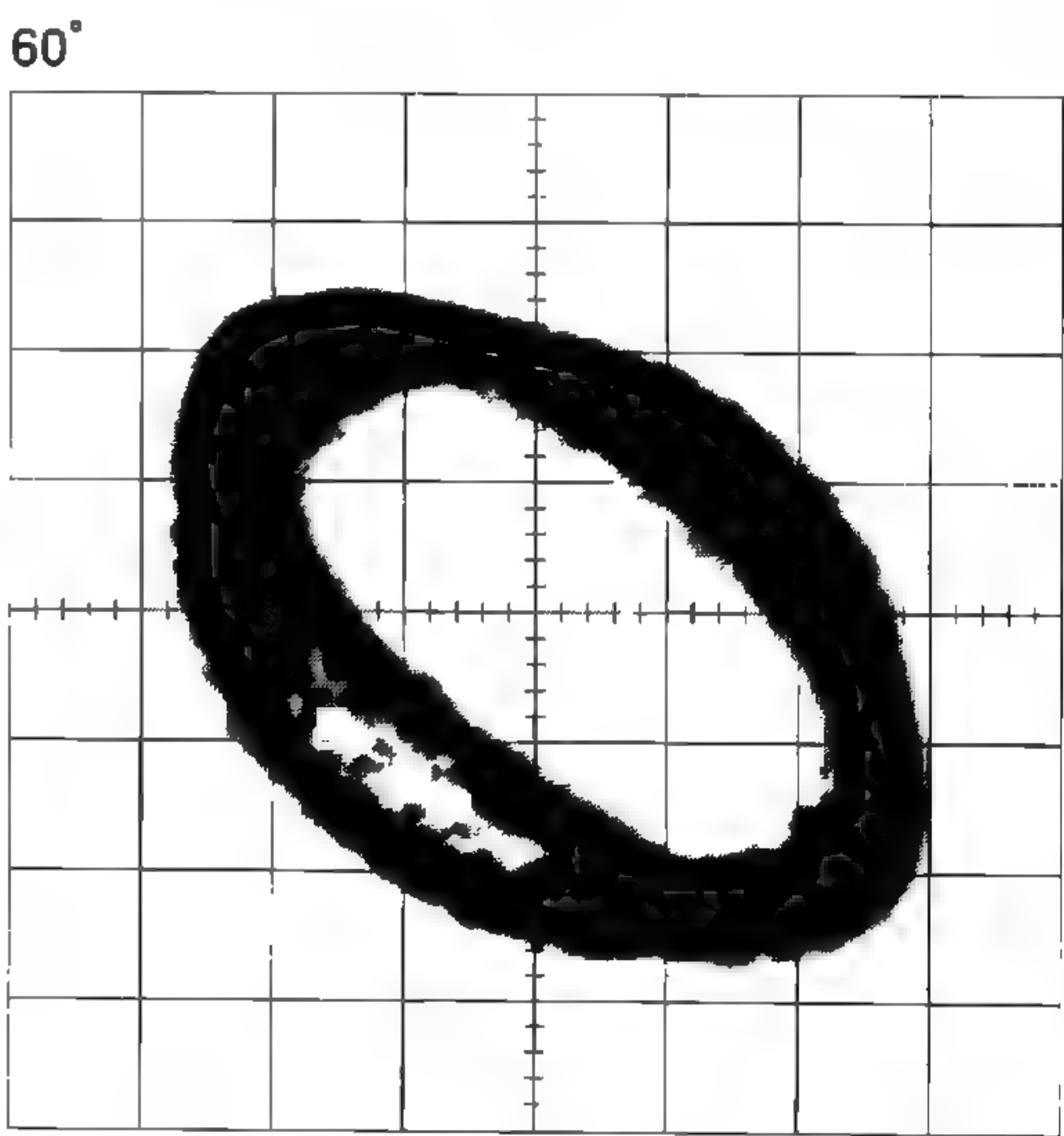
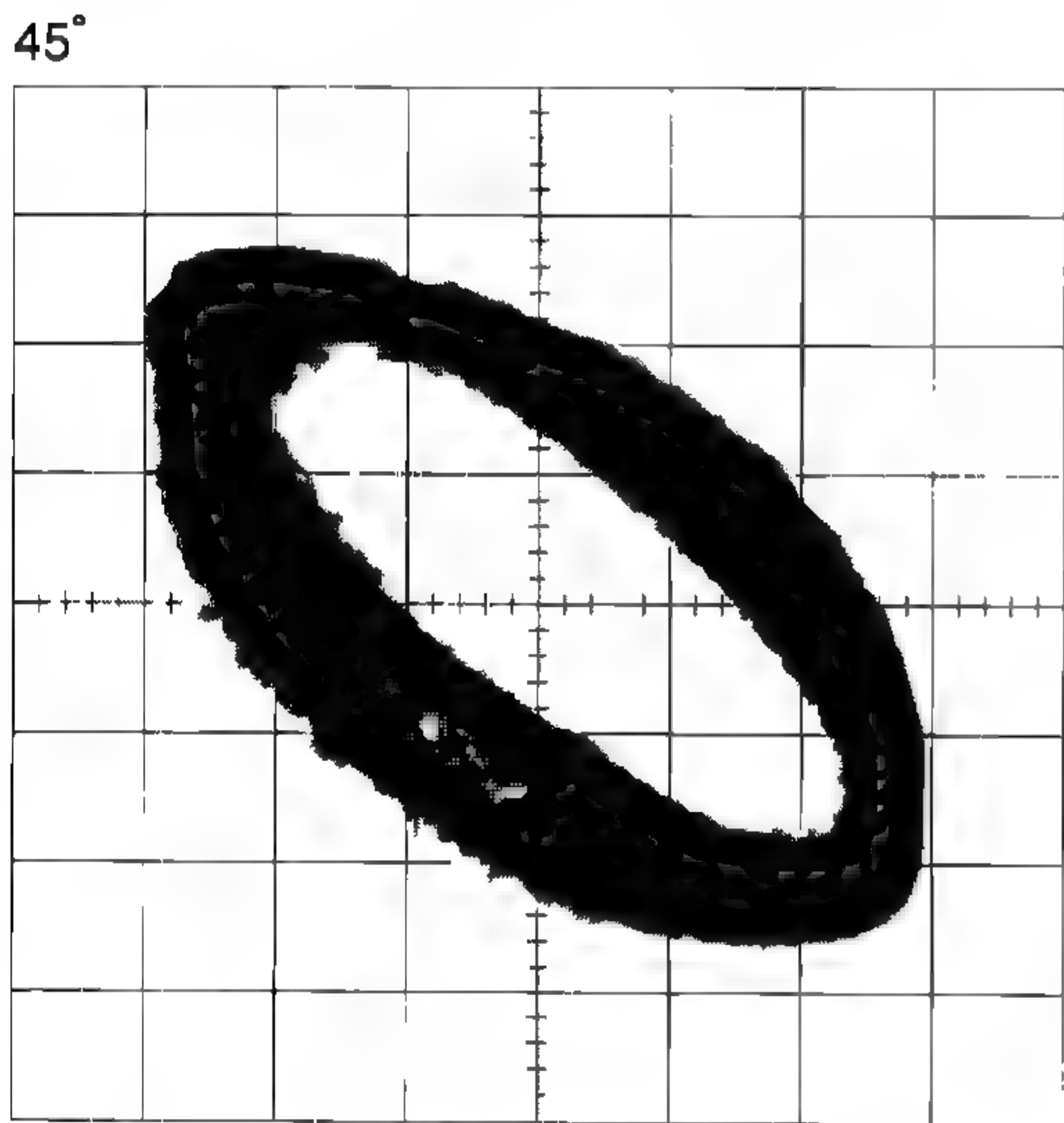
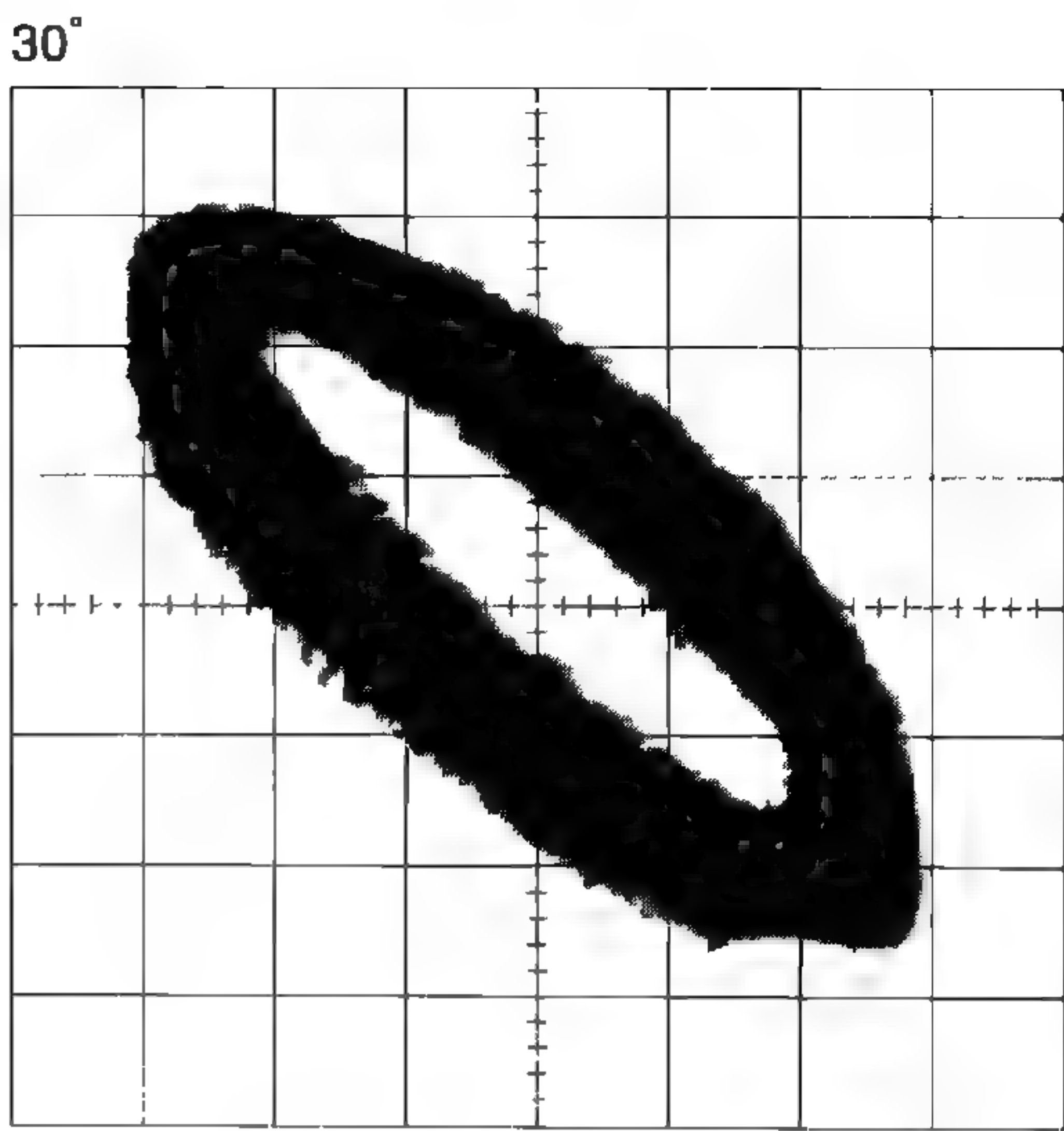
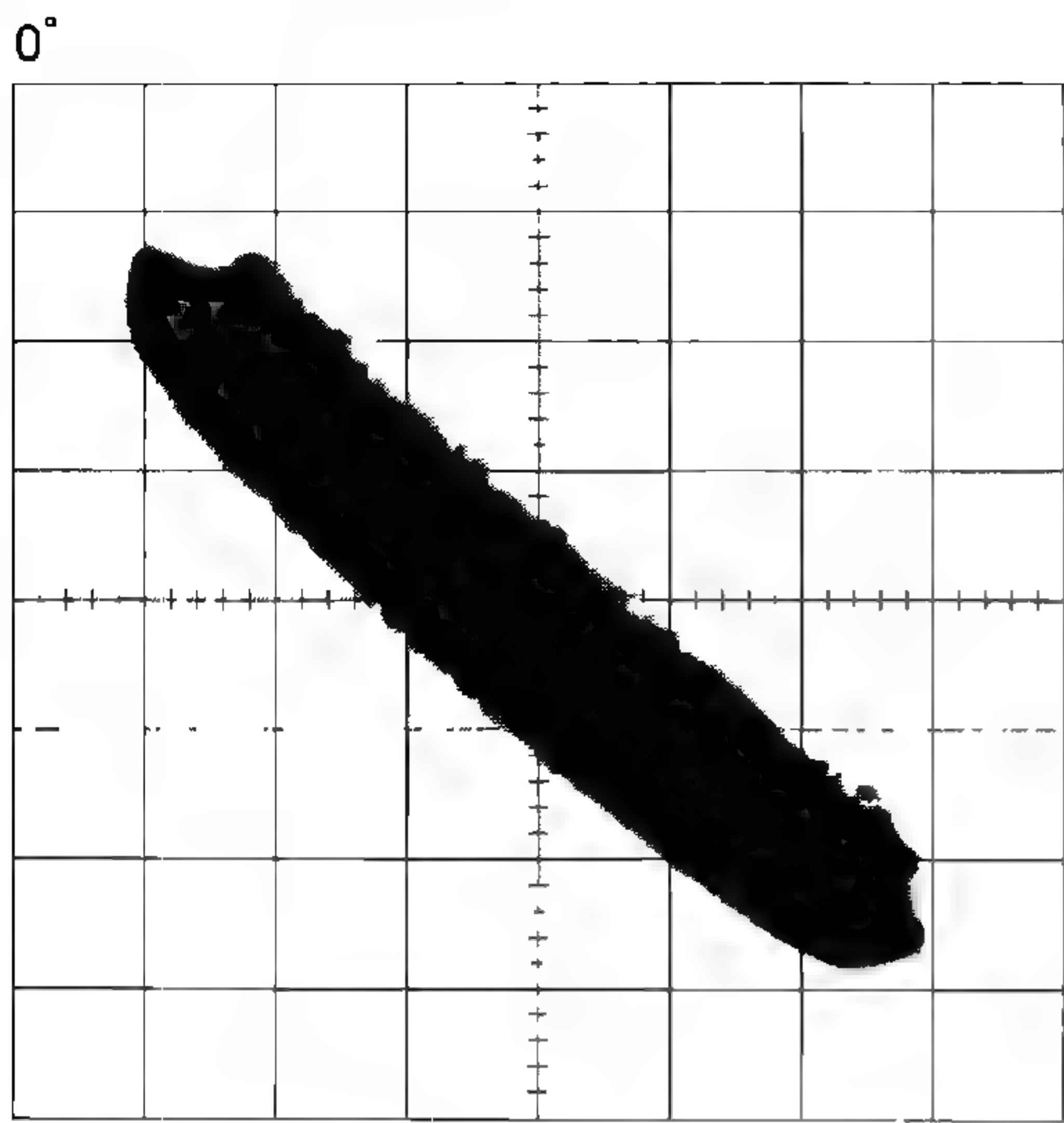
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

· **Hint**

Reloading the disc changes the clamp position and may decrease the "wobble".

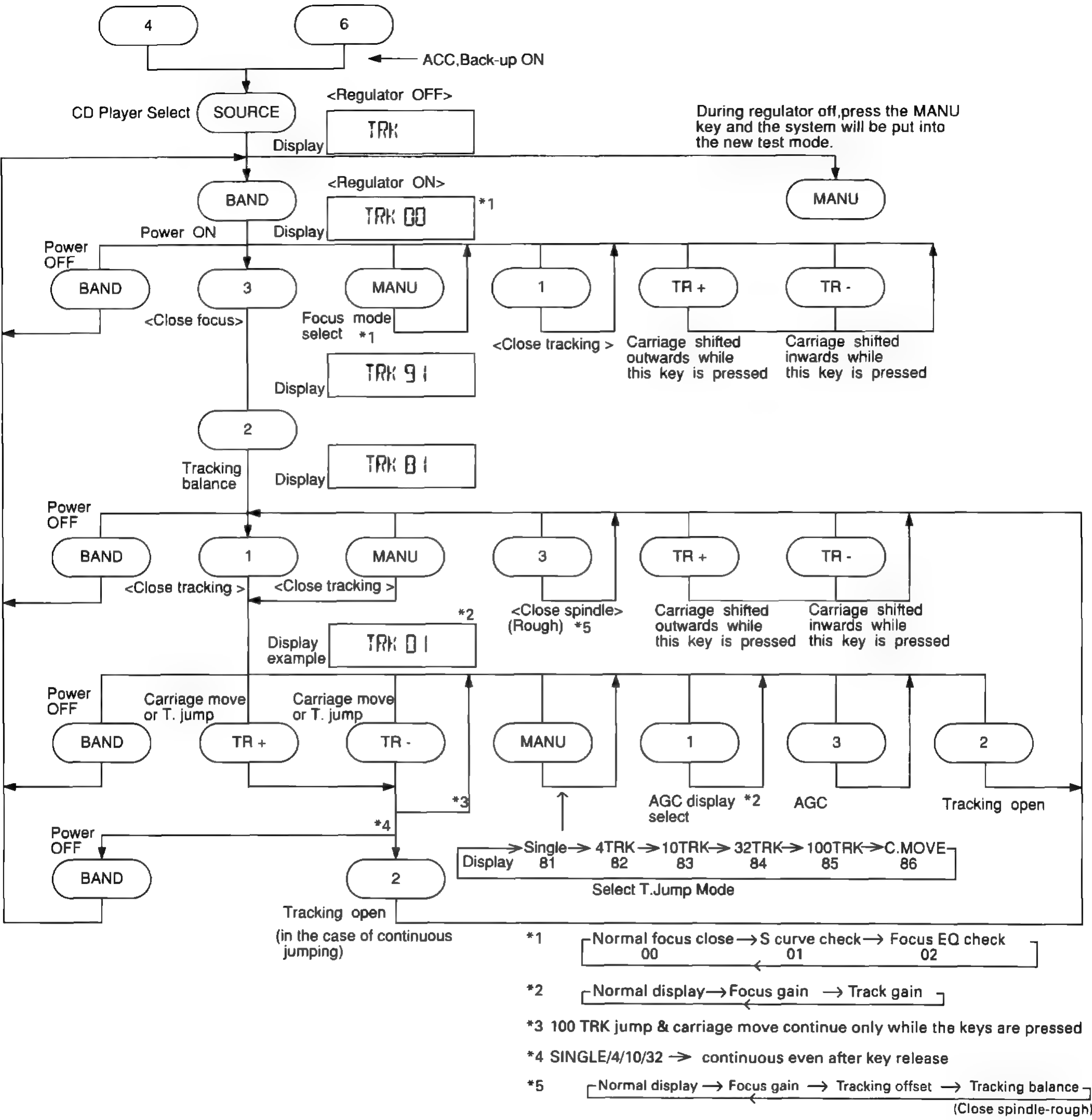
Grating waveform

Ech ▶ Xch 20mV/div, AC
Fch ▶ Ych 20mV/div, AC



6.4 TEST MODE

● Flow Chart

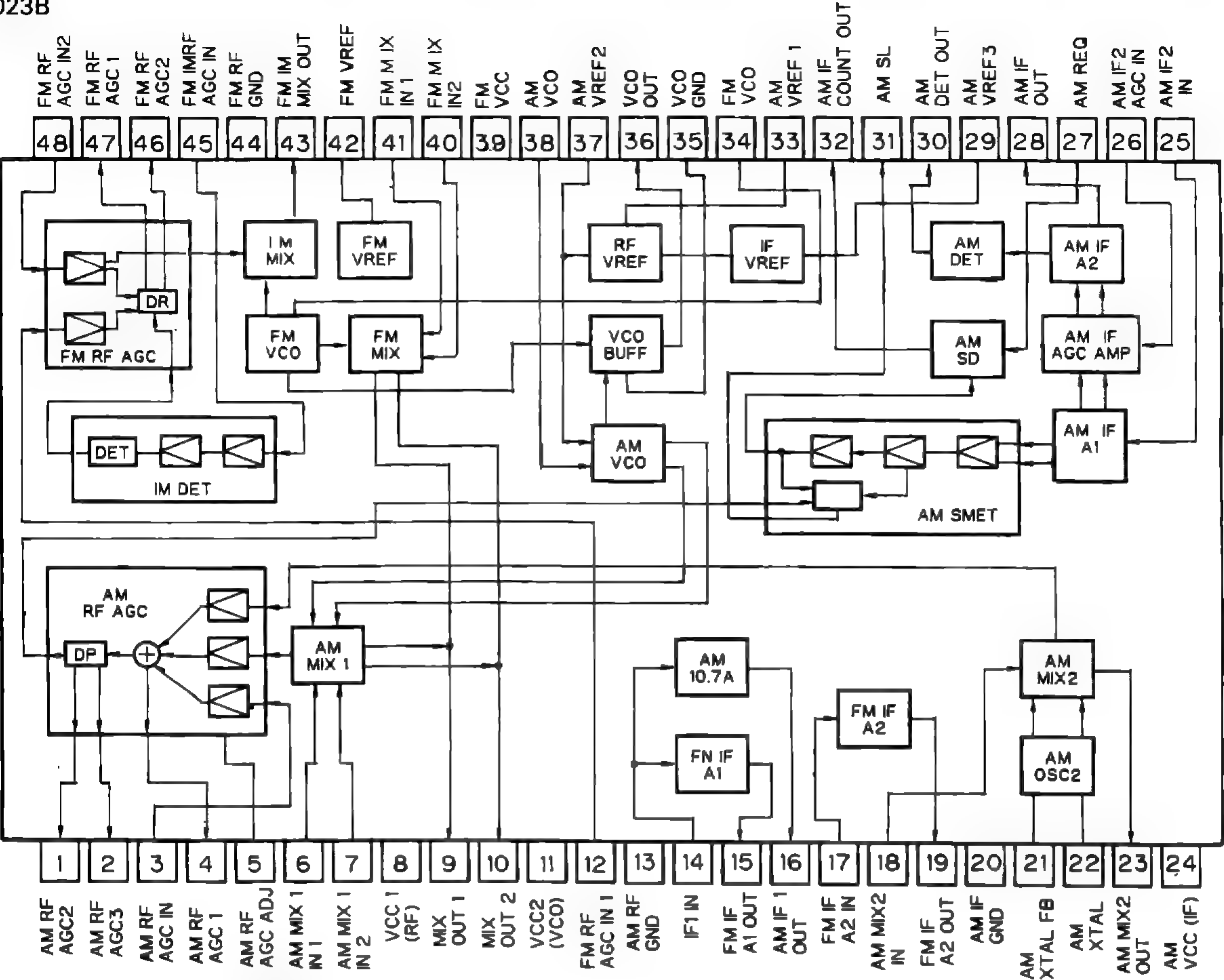


7. GENERAL INFORMATION

7.1 PARTS

7.1.1 IC

PA4023B

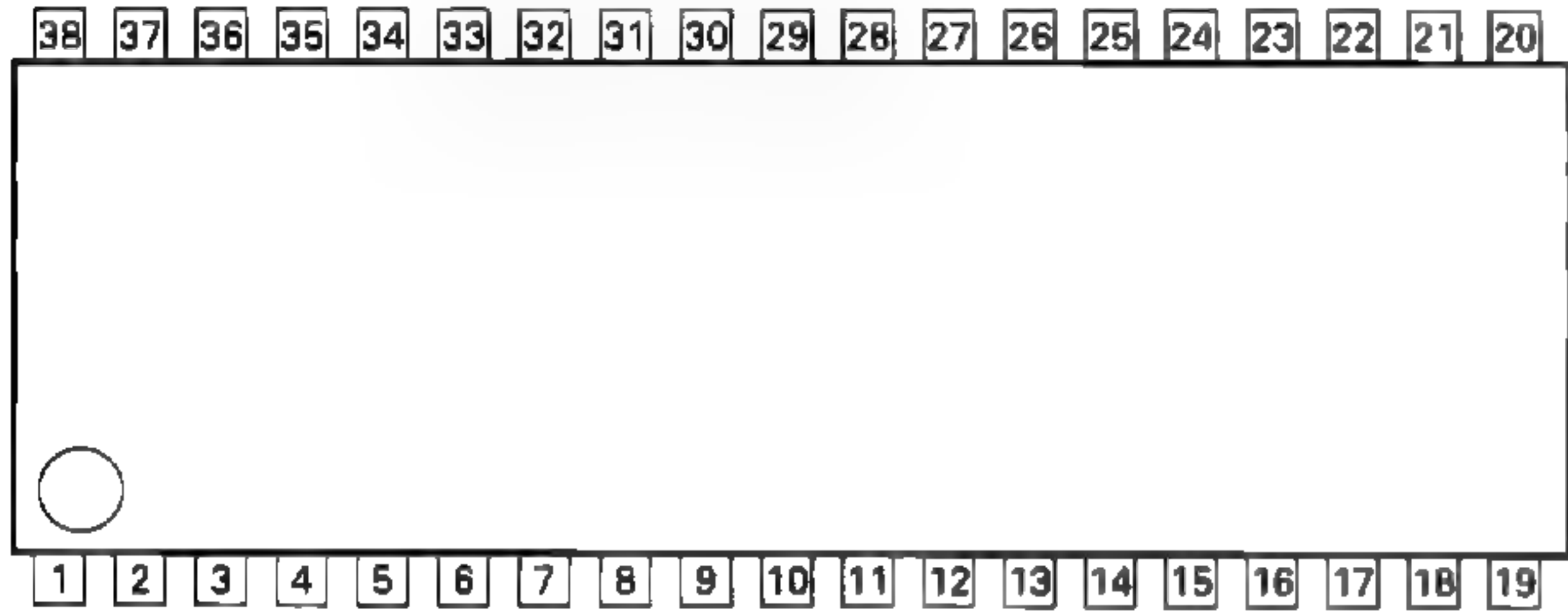


● Pin Functions (UPC2572GS)

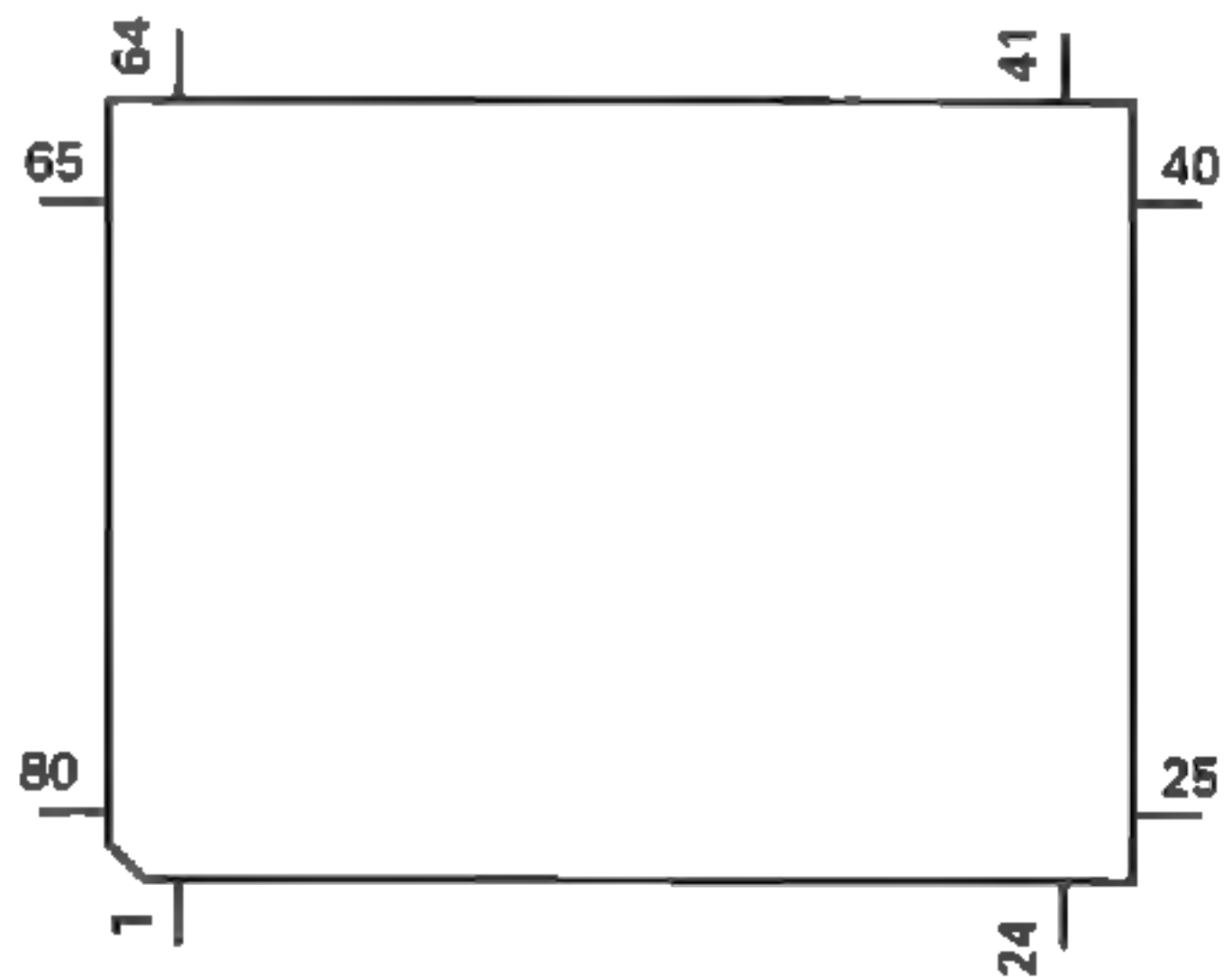
| Pin No. | Pin Name | I/O | Function and Operation |
|---------|----------|-----|---|
| 1 | EFM-IN | I | EFM comparator input |
| 2 | AGC-OUT | O | AGC amplifier output |
| 3 | C. AGC | | Connects AGC peak detection condenser |
| 4 | RF-IN | I | RF signal DC component cut input |
| 5 | RF-OUT | O | RF amplifier output |
| 6 | RF- | I | RF amplifier inverted input |
| 7 | C1, 3T | | Connects RF3T component detection condenser |
| 8 | C2, 3T | | Connects RF3T component detection condenser |
| 9 | Vcc | | Power supply |
| 10 | A | I | A signal input |
| 11 | C | I | C signal input |
| 12 | B | I | B signal input |
| 13 | D | I | D signal input |
| 14 | F | I | F signal input |
| 15 | E | I | E signal input |
| 16 | PD | I | APC amplifier input |
| 17 | LD | O | APC amplifier output |
| 18 | LDON | I | Laser diode ON/OFF input |
| 19 | VREF-OUT | O | Reference voltage output |
| 20 | VREF-IN | I | Reference voltage input |
| 21 | DET-OUT | O | Vibration detection circuit output |

| Pin No. | Pin Name | I/O | Function and Operation |
|---------|----------|-----|---|
| 22 | DET-IN | I | Vibration detection circuit input |
| 23 | TE-OUT2 | O | Tracking error amplifier output (fourfold gain) |
| 24 | TE-OUT1 | O | Tracking error amplifier output (singlefold gain) |
| 25 | TE- | I | Tracking error amplifier inverted input |
| 26 | GND | | GND |
| 27 | FE- | I | Focus error amplifier inverted input |
| 28 | FE-OUT | O | Focus error amplifier output |
| 29 | C.FE | I | Focus error signal DC component cut input |
| 30 | 3T-OUT | O | RF3T component output |
| 31 | MIRR | O | MIRR signal output |
| 32 | RFOK | O | RFOK signal output |
| 33 | DEFECT | O | DEFECT signal output |
| 34 | C. DEF | | Connects DEFECT signal detection condenser |
| 35 | EFM-OUT | O | EFM comparator output |
| 36 | ASY | I | EFM comparator level input |
| 37 | TE-BAL | I | Tracking balance control |
| 38 | FE-BAL | I | Focus balance control |

UPC2572GS



*UPD63702GF



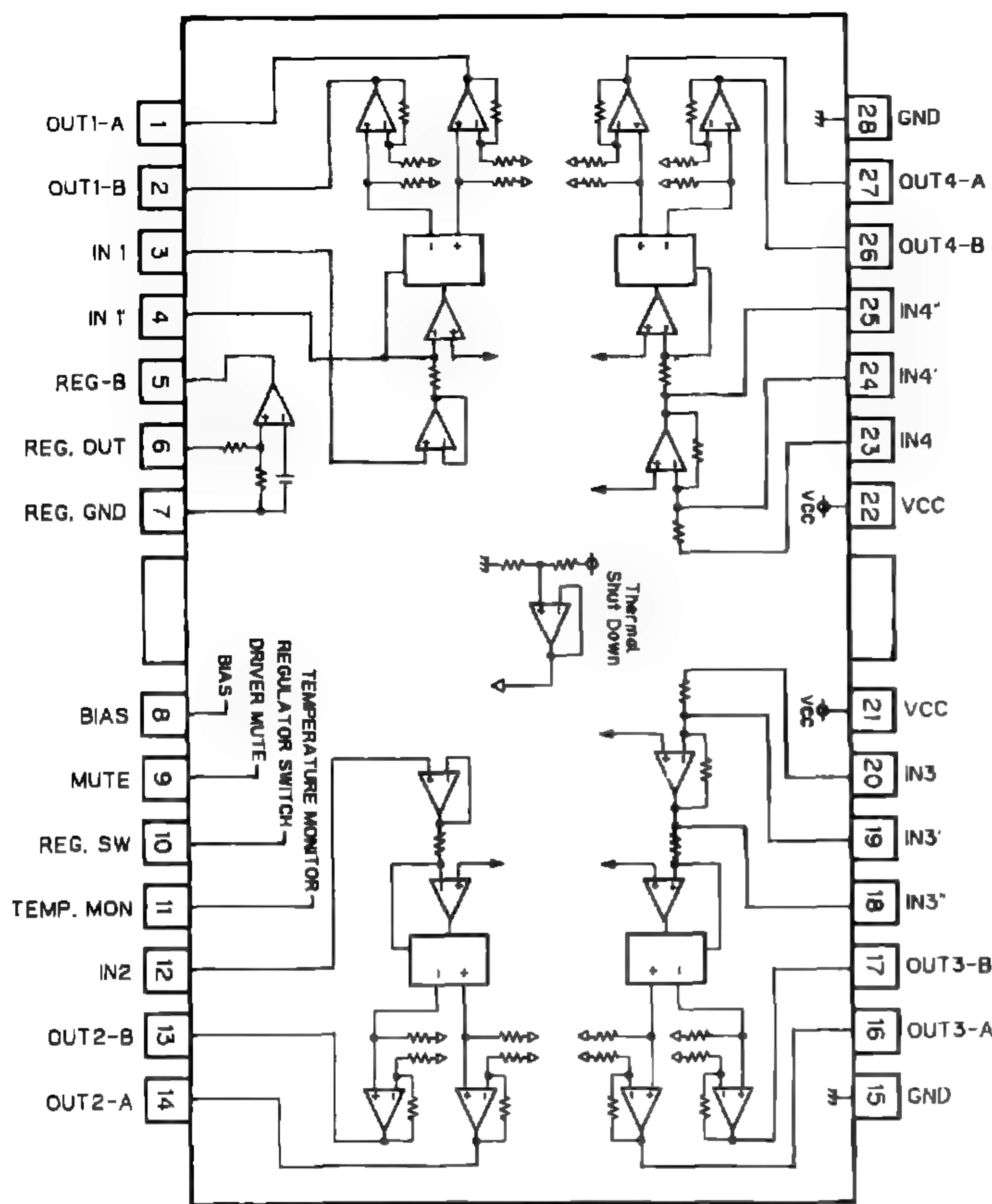
IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

● Pin Functions (UPD63702GF)

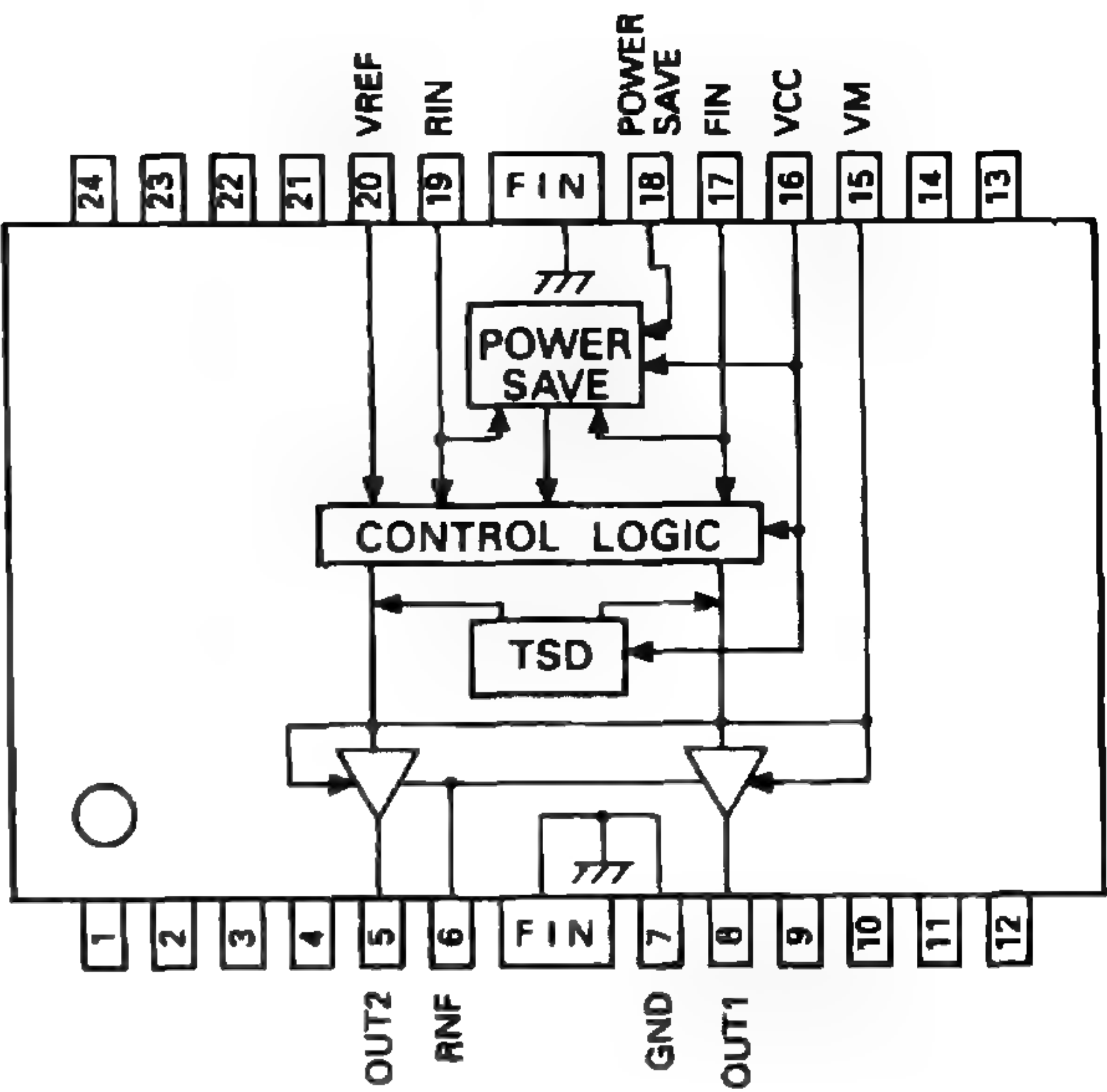
| Pin No. | Pin Name | I/O | Function and Operation |
|---------|----------|-----|--|
| 1 | D.VDD | | Supplies current of positive voltage to the logic circuits |
| 2 | RST | I | System reset input pin |
| 3 | AO | I | Microcomputer interface AO="L": STB active and set to address register AO="H": STB active and set to parameter |
| 4 | STB | I | Signal to latch serial data within the LSI |
| 5 | SCK | I | Clock input pin to input and output serial data |
| 6 | SO | O | Outputs serial data and status signal |
| 7 | SI | I | Serial data input pin |
| 8 | D.GND | | Logic circuit GND |
| 9 | X.GND | | Crystal oscillation circuit GND |
| 10 | XTAL | I | Crystal oscillator connection pin |
| 11 | XTAL | O | Crystal oscillator connection pin |
| 12 | X.VDD | | Supplies current of positive voltage to the crystal oscillation circuit |
| 13 | DA.VDD | | Supplies current of positive voltage to the D/A converter |
| 14 | R+ | O | Right channel analog audio data output pin |
| 15 | R- | O | Right channel analog audio data output pin |
| 16,17 | DA.GND | | D/A converter GND |
| 18 | L- | O | Left channel analog audio data output pin |
| 19 | L+ | O | Left channel analog audio data output pin |
| 20 | DA.VDD | | Supplies current of positive voltage to the D/A converter |
| 21 | D.VDD | | Supplies current of positive voltage to logic circuit |
| 22 | FLAG | O | Flag output pin to indicate that audio data currently being output consists of noncorrectable data |
| 23 | WDCK | O | Pin to output double the frequency of LRCK |
| 24 | C16M | O | Pin to output the clock |
| 25 | EMPH | O | Output pin for the pre-emphasis data in the sub-Q code |

| Pin No. | Pin Name | I/O | Function and Operation |
|---------|------------|-----|---|
| 26 | DIN | I | Input pin for serial audio data |
| 27 | DOUT | O | Output pin for the serial audio data |
| 28 | SCKO | O | Output pin for the clock for the serial audio data |
| 29 | LRCK | O | Signals to distinguish the right and left channels of the audio data output from DOUT. Frequency is 44.1kHz at 50% duty at normal regeneration |
| 30 | TX | O | Output pin for the digital audio interface data |
| 31 | CTLV | I | Oscillation control pin for high-frequency clock generation VCO used for the digital PLL upon regeneration at fast speed of 2- or 4-fold |
| 32 | POUT | O | Output point for phase comparison |
| 33 | D.GND | | GND for the logic circuit |
| 34 | VCO | I | Input pin for the inverter |
| 35 | VCO | O | Output pin for the inverter |
| 36 | D.VDD | | Supplies current of positive voltage to the logic circuit |
| 37 | PLCK | O | Pin for monitoring the bit clock |
| 38 | LOCK | O | Indicates "H" when the synchronized pattern detection signal matches the frame counter output at the EFM recovery modulation, and "L" when they don't match |
| 39 | WFCK | O | Minute-cycle signal for the bit clock, the signal indicates the cycle of 1 frame (approx. 7.35kHz) |
| 40 | RFCK | O | Minute-cycle signal for the clock, the signal indicates cycle of 1 frame (approx. 7.35kHz) |
| 41 | D.GND | | GND for the logic circuit |
| 42,43 | TEST0,1 | I | Test pins |
| 44,45 | TM2, TM4 | I | Pins for controlling regeneration at fast speed of 2- or 4-fold |
| 46-49 | T4-T7 | I | Test pins |
| 50,51 | C1D1, C1D2 | O | Output pin for indicating the C1 error correction results |
| 52-54 | C2D1-C2D3 | O | Output pin for indicating the C2 error correction results |
| 55 | D.VDD | | Supplies current of positive voltage to the logic circuit |
| 56 | SFSY | O | Outputs 1 word of the subcode. Generally, 1 cycle is approx 136 micro seconds |
| 57 | SBSY | O | The signal indicates the beginning of the subcode block. The SFSY signal is output at high level every 98 times |
| 58 | SBSO | O | Output pin for the subcode data |
| 59 | SBCK | I | Input pin for the clock signal for read-out of the subcode data |
| 60 | A.GND | | GND for the analog circuit |
| 61 | MD | O | Output pin for the spindle drive |
| 62 | SD | O | Output pin for the sled drive |
| 63 | TD | O | Output pin for the tracking drive |
| 64 | FD | O | Output pin for the focus drive |
| 65 | FBAL | O | Output pin for the focus balance control |
| 66 | TBAL | O | Output pin for the tracking balance control |
| 67 | A.VDD | | Supplies current of positive voltage to the analog circuit |
| 68 | TBC | I | Switches coefficient banks for the tracking filter |
| 69 | EFM | I | Input pin for the EFM signal |
| 70 | HOLD | I | Input pin for the hold control signal |
| 71 | RFOK | I | Input pin for the RFOK signal |
| 72 | MIRR | I | Input pin for the MIRR signal |
| 73 | A.GND | | GND for the analog circuit |
| 74 | HOME | I | Home position detector input |
| 75 | VR1 | I | The signal input through these pins is digitized to 8-bit by the A/D converter, which by operation of the assigned register, can be read into the microcomputer |
| 76 | FE | I | Inputs a focus-error signal from the RF amplifier |
| 77 | TE | I | Inputs a tracking-error signal from the RF amplifier |
| 78 | TEC | I | Input pin for the tracking comparator |
| 79 | REFOUT | O | Output point for midpoint potential for the A/D converter for the LSI portion |
| 80 | A.VDD | | Supplies current of accurate voltage to the analog circuit |

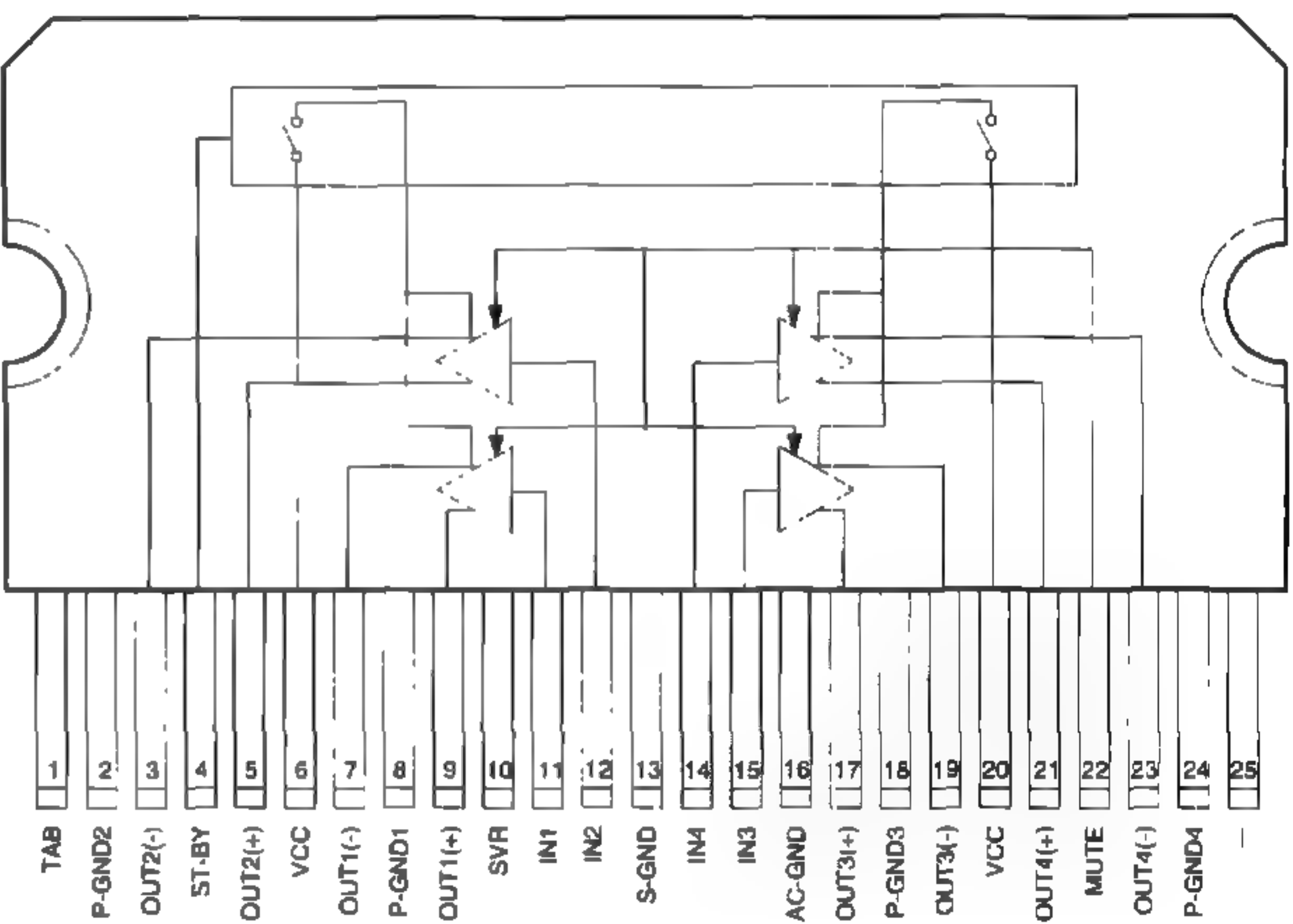
XLA6997FP



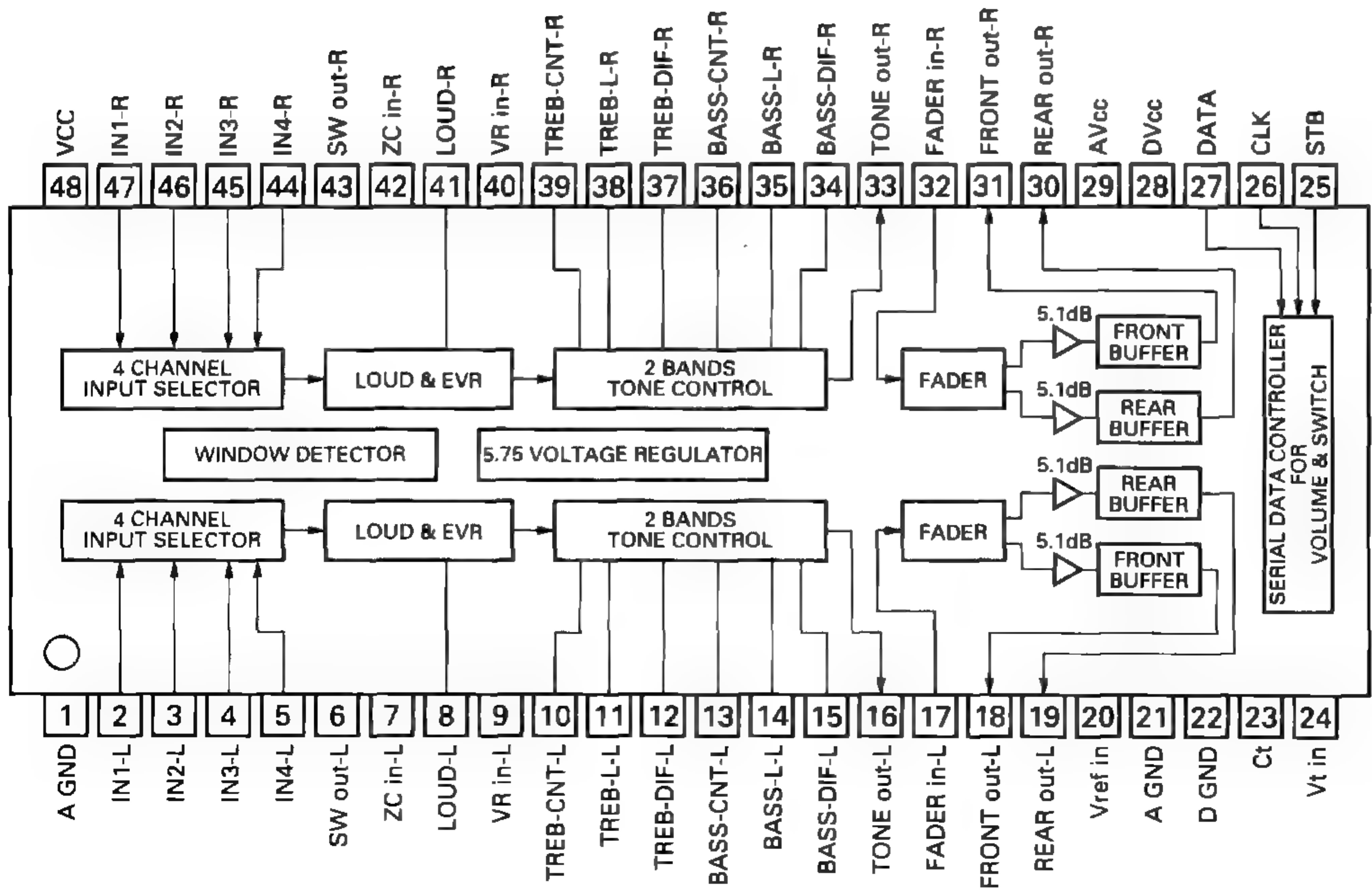
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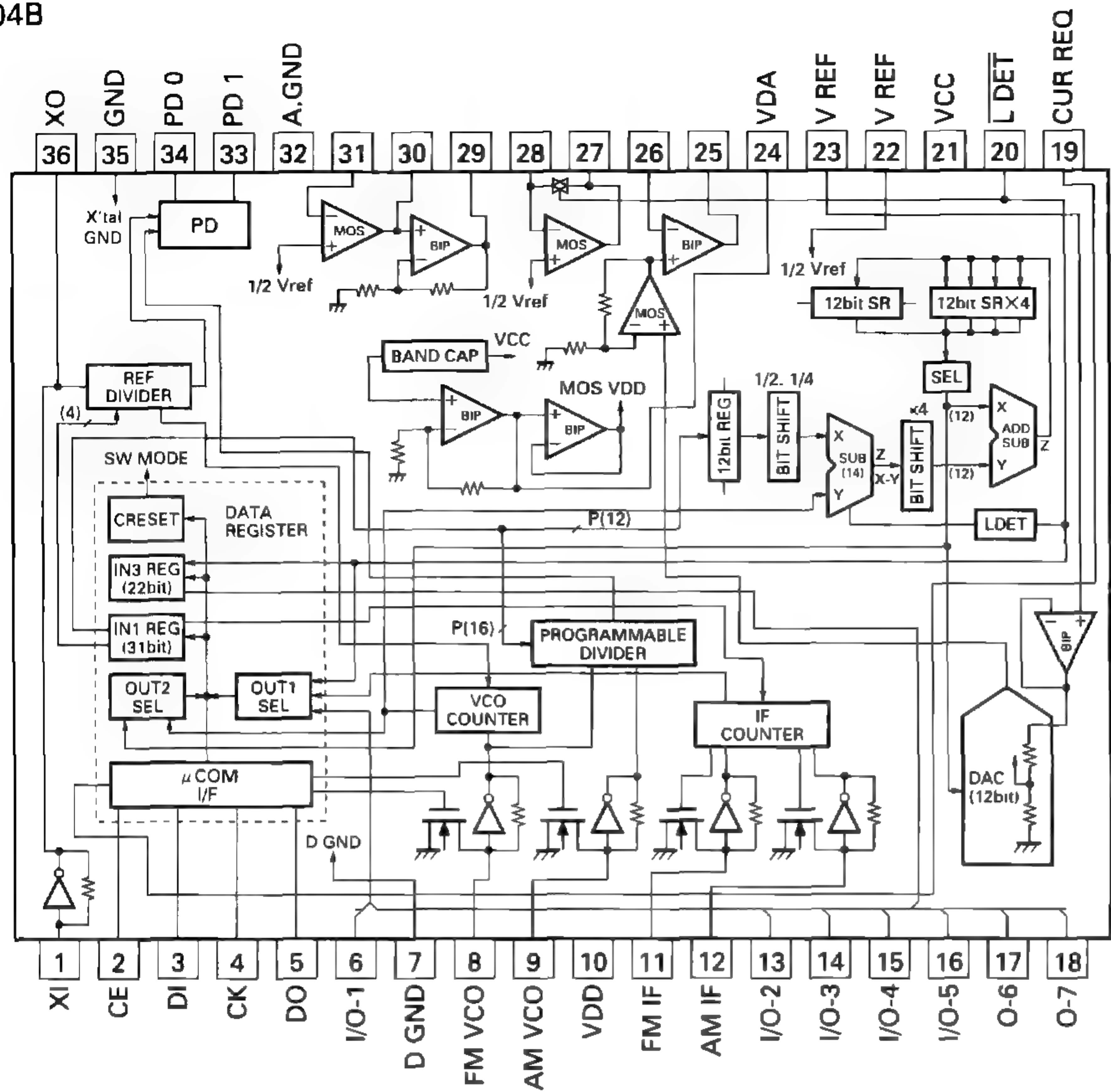
TDA7384A



*SN761027DL



PM2004B

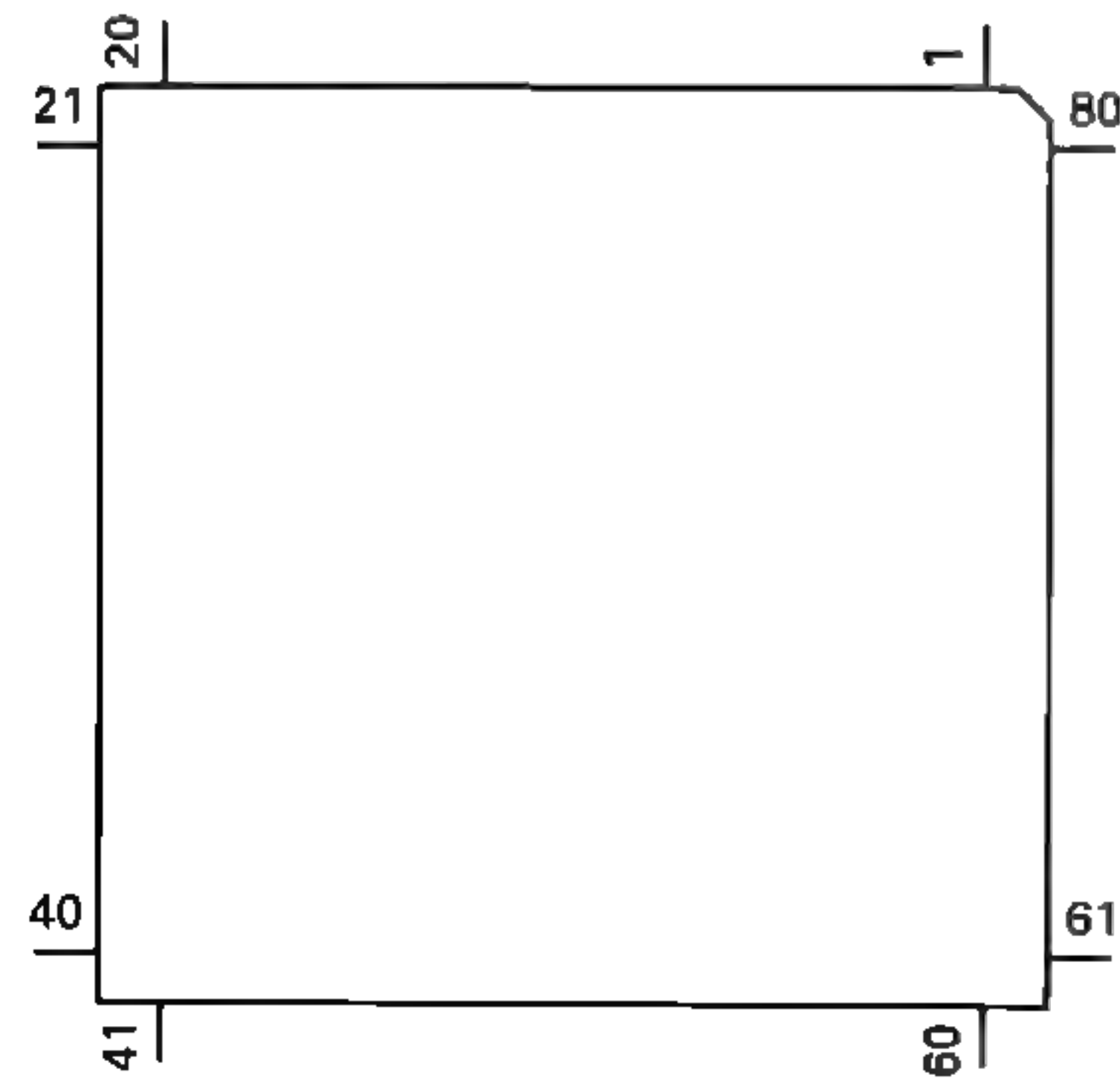


● Pin Functions (PDR027B)

| Pin No. | Pin Name | I/O | Format | Function and Operation |
|---------|----------|-----|--------|---|
| 1 | MODEL1 | I | | Model select input |
| 2,3 | NC | | | Not used |
| 4 | AVSS | | | GND |
| 5 | ST | I | | FM stereo input |
| 6 | SD | I | | SD input |
| 7 | AVREF1 | | | A/D converter reference voltage |
| 8 | KYDT | I | | Key data input |
| 9 | DPDT | O | C | Display data output |
| 10 | NC | | | Not used |
| 11 | PDI | I | | Data input from PLL IC |
| 12 | PDO | O | C | Data output for PLL IC |
| 13 | PCK | O | C | Serial clock output for PLL IC |
| 14 | PCE | O | C | Chip enable output for PLL IC |
| 15 | CURRQ | O | C | Tuner voltage FIX output |
| 16 | XSI | I | | Data input from CD mechanism module LSI |
| 17 | XSO | O | C | Data output for CD mechanism module LSI |
| 18 | XSCK | O | C | Clock output for CD mechanism module LSI |
| 19 | NC | | | Not used |
| 20 | AM | O | C | AM power control output |
| 21 | FM | O | C | FM power control output |
| 22 | VDCONT | O | C | VD control output |
| 23 | CONT | O | C | Servo driver power supply control |
| 24 | XAO | O | C | Command/Data output for CD mechanism module LSI |
| 25 | XRST | O | C | Reset output for CD mechanism module LSI |
| 26 | XSTB | O | C | Strobe output for CD mechanism module LSI |
| 27 | CLAMP | I | | Disc clamp sense input |
| 28 | MIRR | I | | Mirror detector input |
| 29 | FOK | I | | Focus OK signal input |
| 30 | LOCK | I | | Spindle lock detector input |

| Pin No. | Pin Name | I/O | Format | Function and Operation |
|---------|----------|-----|--------|---|
| 31 | CDLOAD | O | C | Load motor loading control output |
| 32 | NC | | | Not used |
| 33 | VSS | | | GND |
| 34 | CDEJET | O | C | Load motor eject control output |
| 35 | CD5VON | O | C | CD +5V power supply control output |
| 36 | DLED | O | N | Alarm LED output |
| 37,38 | MODEL2,3 | I | | Model select input |
| 39,40 | NC | | | Not used |
| 41 | SWVDD | O | C | Grille power supply control output |
| 42 | SYSPW | O | C | System power supply control output |
| 43 | ILMPW | O | C | Illumination power supply control output |
| 44 | MUTE | O | C | System mute output |
| 45 | PEE | O | C | Beep tone output |
| 46 | DOORH | O | C | Door system select output |
| 47 | DRSENS | I | | Door open/close sense input |
| 48 | NC | | | Not used |
| 49 | VST | O | C | Strobe pulse output for electronic volume |
| 50 | VCK | O | C | Clock output for electronic volume |
| 51 | VDT | O | C | Data output for electronic volume |
| 52-54 | NC | | | Not used |
| 55 | DRELAY | O | C | External relay output |
| 56 | TUNPW | O | C | Tuner power supply control output |
| 57 | LPFSW | O | C | Output for FIE |
| 58,59 | NC | | | Not used |
| 60 | RESET | I | | Reset input |
| 61 | LDET | I | | PLL lock sense input |
| 62 | NC | | | Not used |
| 63 | ASENS | I | | ACC power sense input |
| 64 | BSENS | I | | Back up power sense input |
| 65 | DSENS | I | | Grille detach sense |
| 66 | CLKIN | I | | Clock input |
| 67 | NC | | | Not used |
| 68 | VDD | | | Power supply |
| 69 | X2 | | | Crystal oscillator connection pin |
| 70 | X1 | | | Crystal oscillator connection pin |
| 71 | IC | | | Connect to GND |
| 72 | XT2 | | | Not used |
| 73 | TESTIN | I | | Test program mode input |
| 74 | AVDD | | | Positive power supply terminal for analog circuit |
| 75 | AVREF0 | | | A/D converter reference voltage |
| 76 | SL | I | | SD level input from tuner |
| 77 | TEMP | I | | Temperature detect input |
| 78 | VDSENS | I | | VD power supply short detection input |
| 79 | DSCSNC | I | | Disc sense input |
| 80 | EJTSNC | I | | Disc eject position sense input |

*PDR027B

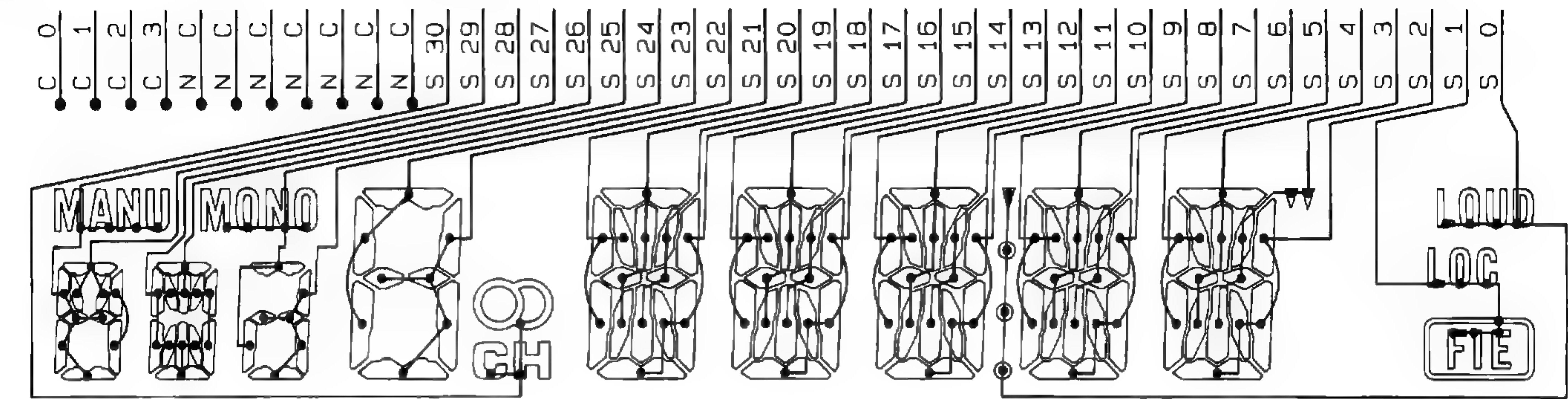


| Format | Meaning |
|--------|----------------------|
| C | C MOS |
| N | N channel open drain |

7.1.2 DISPLAY

● CAW1330

SEGMENT



COMMON

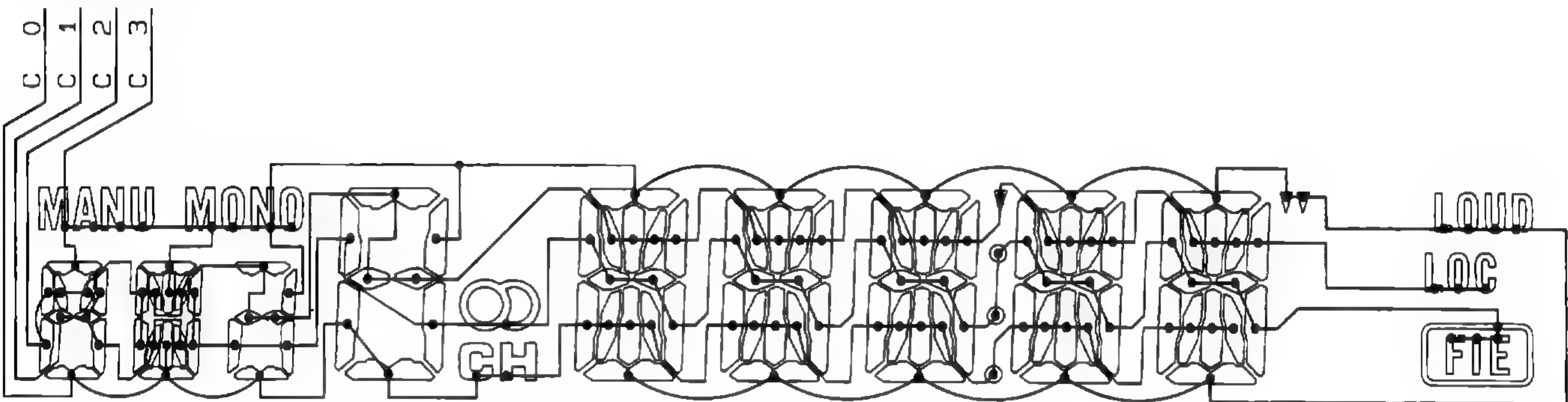


Fig. 30

7.2 DIAGNOSIS

7.2.1 DISASSEMBLY

● Removing the Case(Not shown)

1. Remove the two screws.
2. Insert and turn a flat screwdriver to remove the case.

● Removing the Detach Grille Assy(Fig.31)

(Except for DEH-235/X1M/UC, 236/X1M/ES)

1. Press the detach button, and then pull detach grille Assy.

● Removing the Panel Assy(Fig.31)

(Except for DEH-235/X1M/UC, 236/X1M/ES)

1. Disconnect the two stoppers and then remove the panel Assy.

● Removing the CD Mechanism Module (Fig.31,32)

1. Remove the four screws.
2. Disconnect the connector.
3. Remove the CD Mechanism Module.

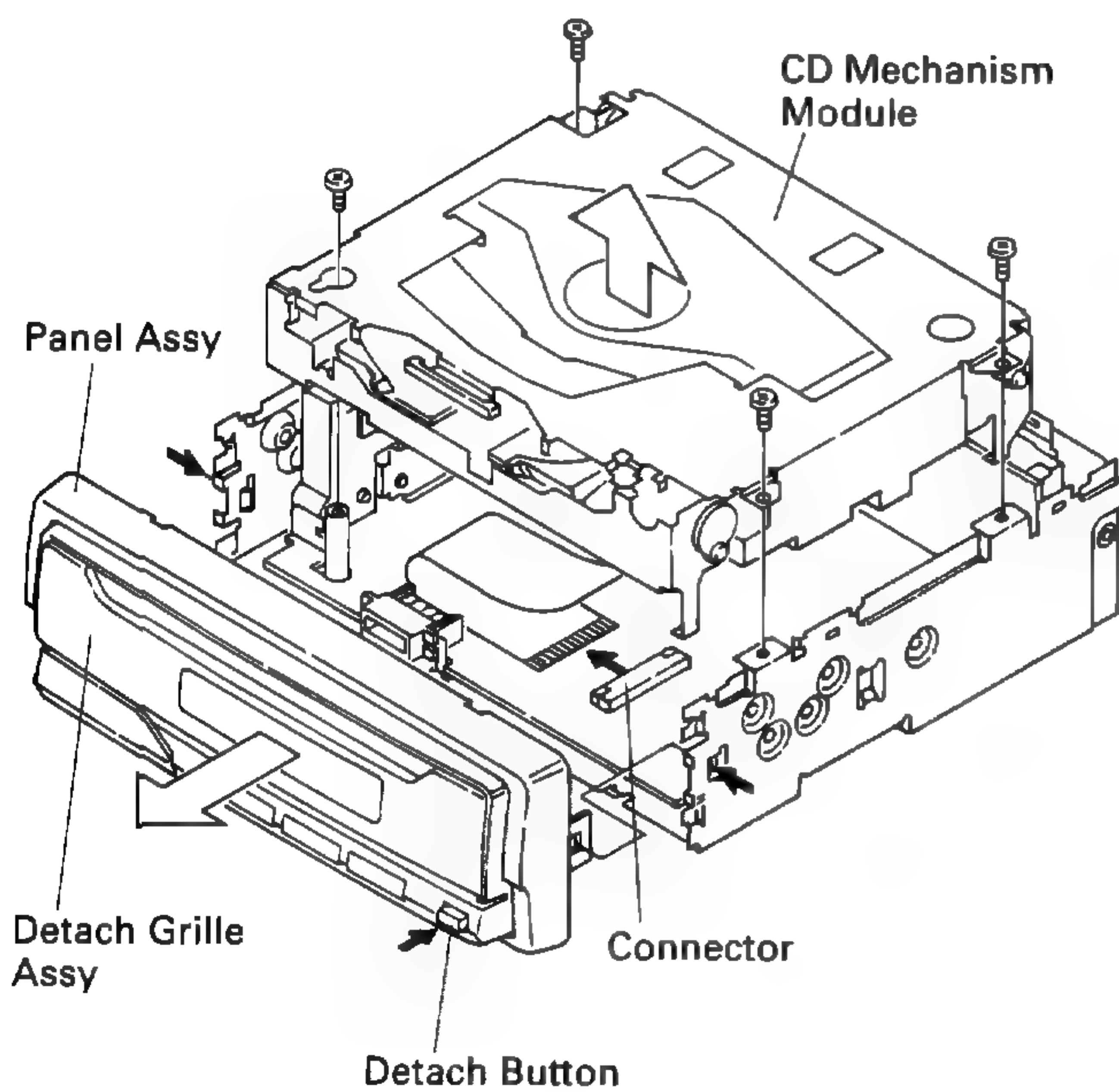


Fig. 31

● Removing the Grille Assy(Fig.32)

(DEH-235/X1M/UC, DEH-236/X1M/ES)

1. Disconnect the connector.
2. Disconnect the two stoppers indicated by arrows, and then remove the grille Assy.

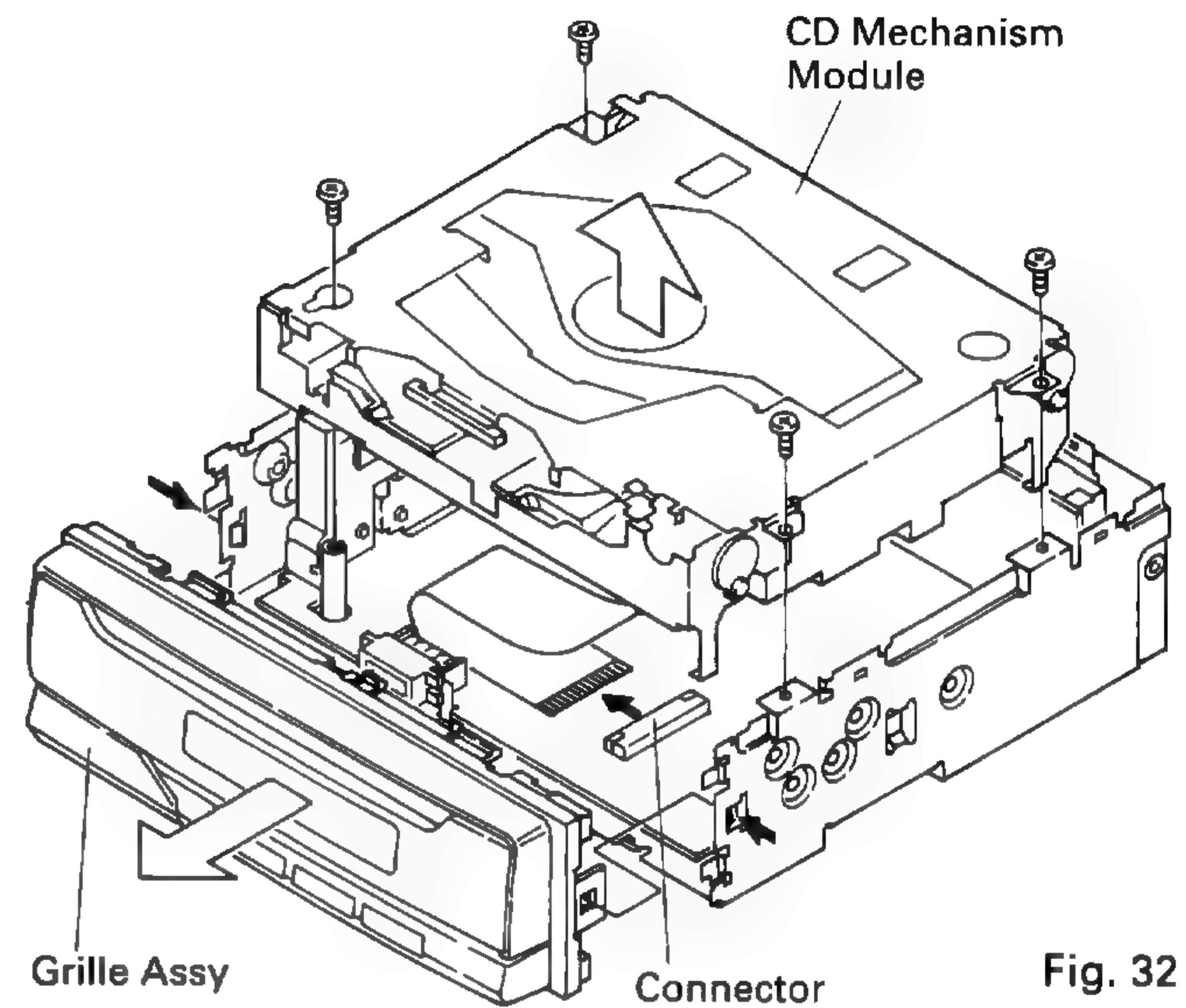


Fig. 32

● Removing the Chassis Unit(Fig.33)

1. Remove the screw A, screw B, screw C and two screws D.
2. Stretch the five claws.
3. Remove the cord, and then remove the chassis Unit.

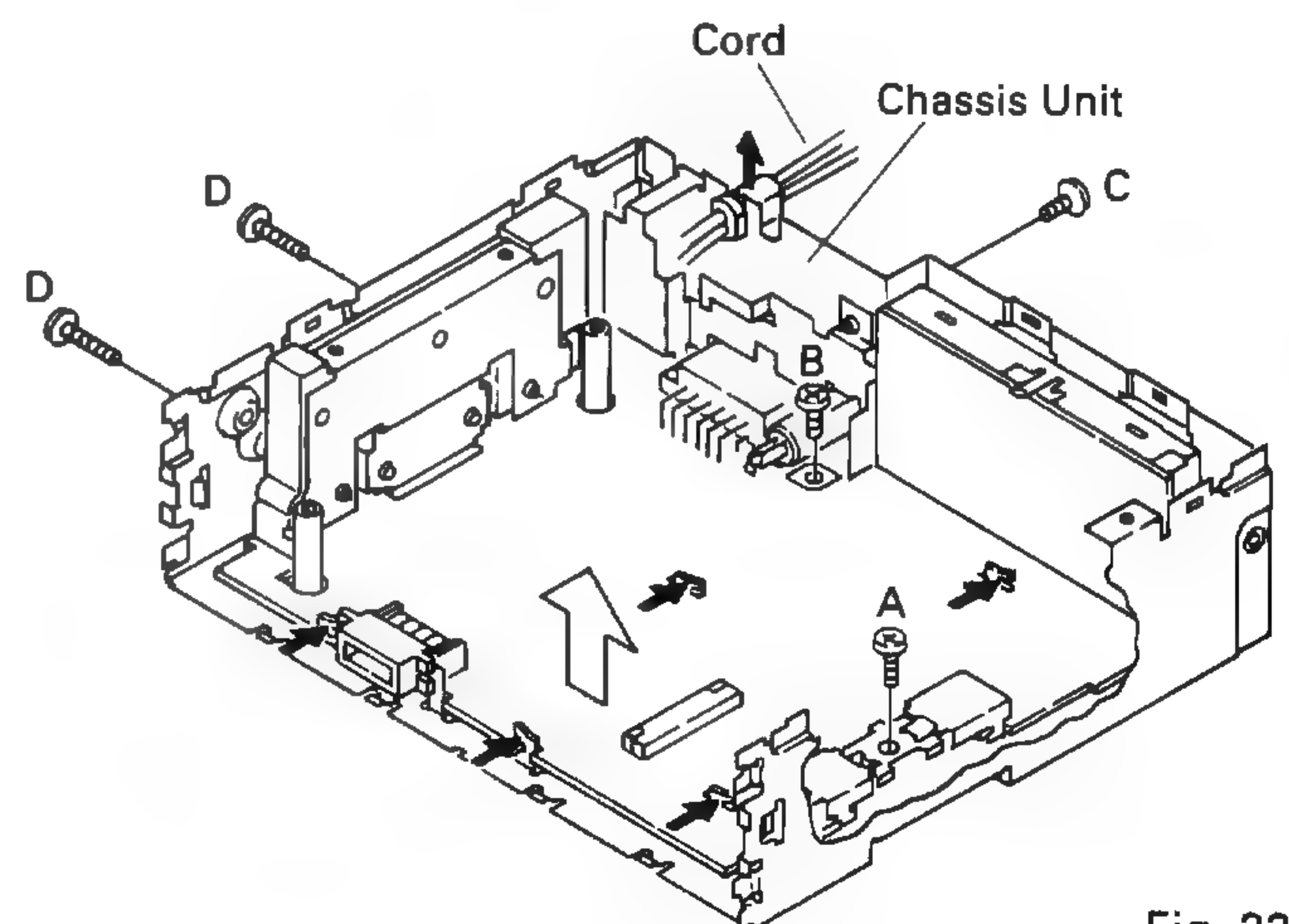


Fig. 33

7.2.2 TEST MODE

● Error Number Indication

If the CD should fail to operate or if an error has taken place during operation the player will enter into the error mode, and the cause of the error will be numerically indicated.
This is aimed at assisting in analysis or repair.

(1) Basic Means of Display

- With ERROR indicated in "MODE" on IP-BUS Display data, an error code is transmitted by the use of MIN and SEC.
The MIN and SEC data will be identical.
- Examples of Display ER-XX

(2) Error Codes

| Error Code | Classification | Description | Cause/Detail |
|------------|----------------|----------------------------------|---|
| 10 | ELECTRIC | Carriage home failure | Carriage doesn't move to or from the innermost position →Home switch failed and/or carriage immobile |
| 11 | ELECTRIC | Focus failure | Focus failed →Defects, disc upside-down, severe vibration |
| 12 | ELECTRIC | SETUP failure Subcode failure | Spindle failed to lock or subcode unreadable →Spindle defective, defect, severe vibration |
| 14 | ELECTRIC | Mirror failure | Unrecorded CD-R The disc is upside-down, defects, vibration |
| 17 | ELECTRIC | Set up failure | AGC protect failed →Defects, disc upside-down, severe vibration |
| 19 | ELECTRIC | Set up failure | Tracking error waveform is too unbalanced (>50%) or level is too small →The P.U.unit or tracking error circuitry is N.G. |
| 30 | ELECTRIC | Search time out | Failed to reach target address →Carriage/tracking defective and/or defects |
| A0 | SYSTEM | Power failure | Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal |

"defects" means scratches, dirt etc an the surface of the disc.

● New Test Mode(aging operation and setup analysis)

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disk number).
During the setup, the CD software operation status (internal RAM and C-point)is displayed.

(1) How to enter NEW TEST Mode

See the test mode flow chart Page 65.

(2) Relations of keys between TEST and NEW TEST Modes

| Keys | Test Mode | | New Test Mode | |
|------|-------------------------|----------------|------------------|--|
| | Regulator OFF | Regulator ON | PLAY in progress | Error Occurred, Protection Activated |
| BAND | Regulator ON | Regulator OFF | — | Time of occurrence / cause of error select |
| TR+ | — | FWD-Kick | TRACK+ / FF | — |
| TR- | — | REV-Kick | TRACK- / REV | — |
| 1 | — | Tracking close | SCAN | — |
| 2 | — | Tracking open | REPEAT | — |
| 3 | — | Focus close | RANDOM | — |
| MANU | To New Test Mode Select | Focus Mode | AUTO/MANU | TRACK No./ time of occurrence select |

Operations, such as EJECT, CD ON/OFF, etc. are performed normally.

(3) Error Cause (Error Number) Code

| Error Code | Classification | Mode | Description | Cause | Detail |
|------------|----------------|------|----------------------------|------------------------------|---|
| 40 | ELECTRIC | PLAY | FOK=L 100ms | Put out of focus | Scratch, Stain, Vibration, Servo defect, etc... |
| 41 | ELECTRIC | PLAY | LOCK=L 100ms | Spindle unlock | |
| 42 | ELECTRIC | PLAY | Subcode unacceptable 500ms | Failed to read subcode | |
| 43 | ELECTRIC | PLAY | Sound skipped | Last address memory operated | |

(4) Indicating an Operation Status During Setup

| Status No. | Description | Protection operation |
|------------|---|--|
| 01 | Carriage home mode started | None |
| 02 | Carriage moving inwards | 10-second time out, Home switch failed |
| 03 | Carriage moving outwards | 10-second time out, Home switch failed |
| 05 | Carriage moving outwards | None |
| 11 | Setup started | None |
| 12 | Spindle turn/Focus search started | None |
| 13 | Waiting for focus closure (XSI=L) | Failure to close focus |
| 10,14 | Waiting for focus closure (FOK=H) | Failure to close focus |
| 15, 16, 17 | Focus closed, Tracking open | Focus disrupted |
| 18 | During focus AGC Subcode waiting | Focus disrupted |
| 19 | During tracking AGC | Disrupted focus |
| 20 | Waiting for MIRR, LOCK or subcode read Carriage closed, SPINDLE=ADAPTIVE | Focus disrupted, MIRR NG, Failure to lock, Failed to read subcode |

5) Example of Display.

·SET UP in progress
Auto

| |
|------|
| TNo. |
| 11 |

Manual

| | |
|-----|-----|
| Min | Sec |
| 11 | 11 |

·Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the normal mode.

·Protection/Error upon occurrence

(a)Error number indicated

| |
|-------|
| ER-xx |
|-------|

Select the display with the BAND key.

(b)Track number indicated

| |
|-----|
| TNo |
| 10 |

(c)Absolute time indicated

| | |
|-----|-----|
| Min | Sec |
| 40 | 05 |

Select the display with the MANU key.

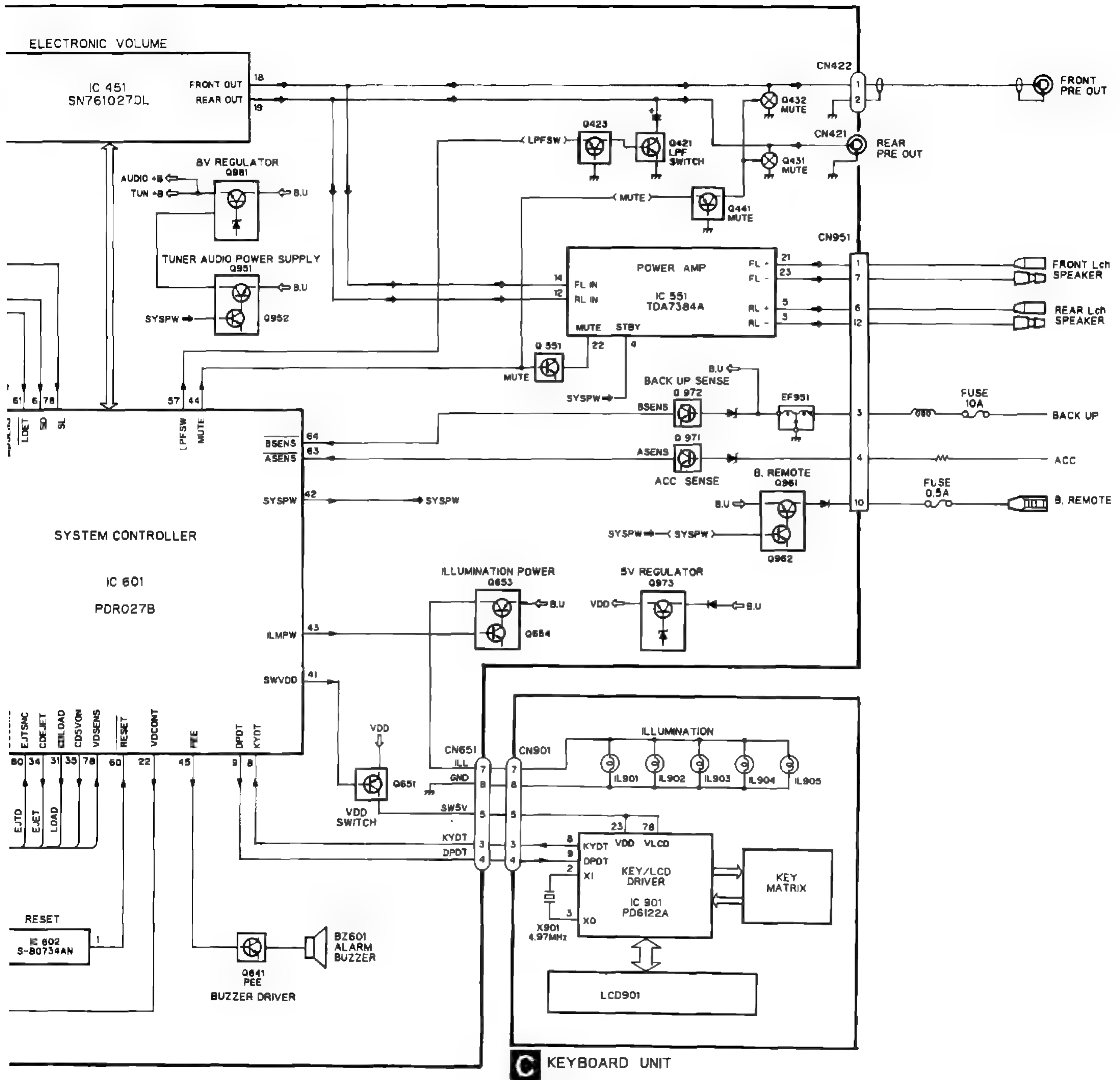


Fig. 34

8. OPERATIONS AND SPECIFICATIONS

● Connection Diagram

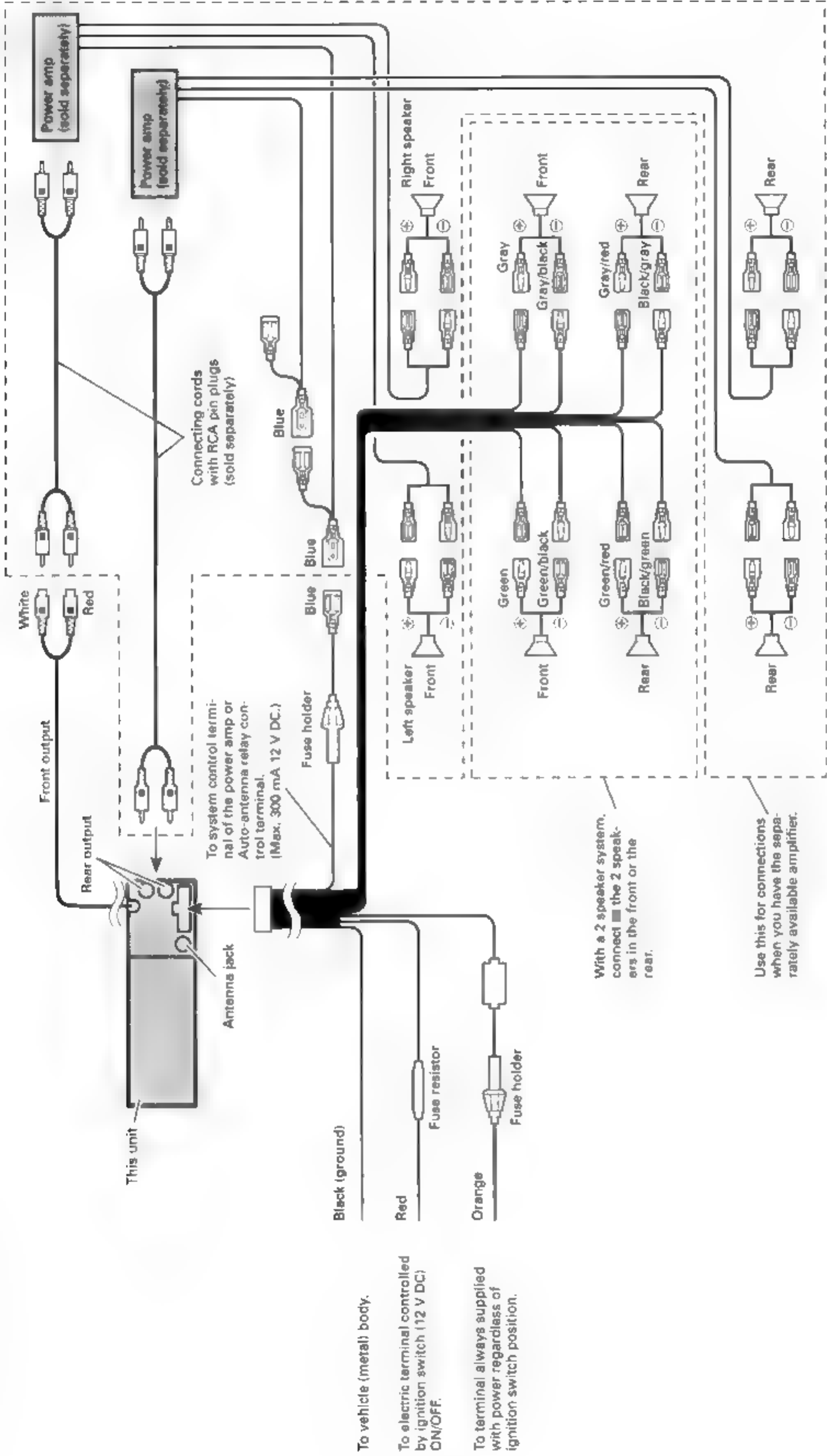


Fig. 35

Audio Adjustment

The audio modes are selected for adjustment with the **S** button. Volume adjustment is the default mode. When another mode is selected for adjustment, the setting returns to the Volume mode after 8 seconds.

Volume Adjustment

- Press the **(+)** button or the **(-)** button repeatedly to raise or lower the volume.

The display shows low to high volumes from "VOL00" to "VOL30."

Note: Holding down the buttons increases or decreases the volume level more rapidly.

Using the F. I. E. function

The F. I. E. (Front Image Enhancer) function is a simple method of enhancing front imaging by cutting mid- and high-range frequency output from the rear speakers, limiting their output to low-range frequencies.

Note: When the F. I. E. function is deactivated, the rear speakers output sound in all frequencies, not only bass sounds. Reduce the volume before disengaging F. I. E. to prevent a sudden increase in volume.

- Press the **S** button once to select the F. I. E. mode.

"FIE" appears on the display.

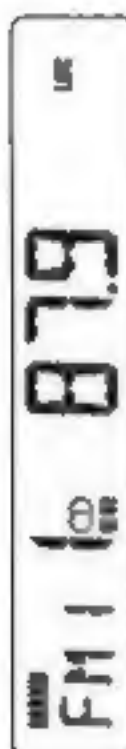
After adjustment use the **S** button to return to the normal display.

- Press the **(▶)** button to activate the F. I. E. function.

"FIE" is displayed and "FIE" indicator lights on the display.



Tuner Operation



Tuner Source and Band

- Push the **SOURCE** button to select Tuner. The Frequency appears on the display. ("CD" indicator lights when stereo station selected.)



- Use the **BAND** button to select the desired band. (FM1, FM2, FM3, AM)



Manual and Seek Tuning

Both Manual (step-by-step) and Seek (automatic) tuning are available.

- Press the **MANU** button to switch alternately between the Manual and Seek tuning modes. The "MANU" indicator lights when Manual tuning is selected and turns OFF when Seek tuning is selected.



- Press the **(▶)** button to tune the receiver to a higher frequency. **MANU ON** (Manual tuning): The frequency changes step by step. **MANU OFF** (Seek Tuning): The tuner automatically seeks out and receives broadcasting stations.



- Press the **(◀)** button to tune the receiver to a lower frequency.



Audio Adjustment

Bass/Treble Adjustment

This tuner/CD player is equipped with two tone adjustment modes, the Bass Adjustment and Treble Adjustment modes.

1. Press the **S** button 3 times to select tone adjustment mode.

"BAS" or "TRE" appears on the display. After adjustment use the **S** button to return to the normal display.

2. Press the (◀) button or the (▶) button to select "Bass Adjustment mode" or "Treble Adjustment mode".

3. Press the (+) button or the (-) button, respectively, to increase or decrease the intensity of the bass or treble, whichever is selected.

The display shows "+6" ~ "-6".

4. Repeat steps 2-3 above for the other Bass or Treble Adjustment mode.

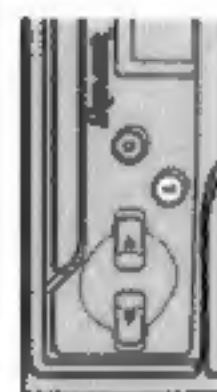
Loudness Adjustment

The Loudness function compensates for deficiencies in the low and high sound ranges at low volume.

- Press the **LOUD** button to activate the Loudness function.

"LOUD" indicator lights.

- To cancel the Loudness function, press the **LOUD** button again.



- To cancel the F. I. E. function, press the (◀) button.

"FIE" indicator OFF.

3. Use the **S** button to select the Fader/Balance mode.

This function adjusts the front and rear speaker volumes for better balanced listening. (Refer to next section.)

Balance Adjustment

The function allows you to select a Fader/Balance setting that provides ideal listening conditions in all occupied seats.

1. Press the **S** button 2 times to select the Fader/Balance mode.

"F-" or "B-" appears on the display.

After adjustment use the **S** button to return to the normal display.

2. Press the (+) button or the (-) button to shift the balance progressively to the front or rear speakers.

"F-F15" ~ "F-R15" is displayed as it moves from front to rear.

Note: "F-0" is the proper setting when 2 speakers are in use.

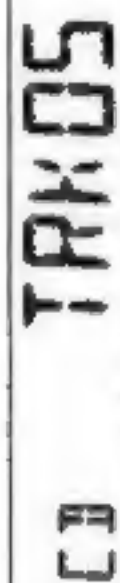
3. Press the (◀) button or the (▶) button to shift the balance to the left or right speaker, respectively.

"B-L9" ~ "B-R9" is displayed as it moves from left to right.



Using the Built-in CD Player

The built-in CD player plays one standard 12 cm or 8 cm (single) CD at a time. Do not use an adapter when playing 8 cm CD.

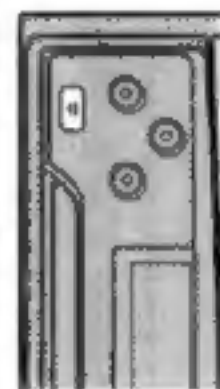


Inserting and Removing Discs

- Insert the disc with the recorded (iridescent) surface down.
- CD playback begins immediately, whether or not the player is ON or the built-in CD source selected. The track number and playing time are displayed.



- Press the Eject button to eject any disc loaded in the disc slot.



Playing the Built-in CD player

- To play a CD that is already loaded, press the SOURCE button with a CD loaded to select the built-in CD player.

The built-in CD player is selected only when a CD is loaded.

Note: See "Audio Adjustment" on pages 12-14 for volume and tone adjustment.



- To stop CD playback, press the SOURCE button to select the tuner or turn the source OFF.

When the built-in CD player is selected again, playback begins at approximately the same place (track/playing time).

Precaution:

- Inserting more than one disc at a time may damage the built-in CD player.
- Discs left partially inserted after ejection may incur damage or fall out.
- If a disc cannot be inserted fully or playback fails, make sure the recorded side is down, push the Eject button and check the disc for damage before reinserting it.
- If a CD is inserted with the recorded side up, it will be ejected automatically after a few moments.
- If the built-in CD player cannot operate properly, an error message (such as ER-14) appears on the display. Refer to "CD Player Troubleshooting".

CD Player Troubleshooting

When problems occur with CD playback, an error message appears on the display. Refer to the table below to identify the problem, then take the suggested corrective action. If the error persists, contact your dealer or your nearest PIONEER Service Center.

| Message | Possible cause | Recommended action |
|-------------------------------|-----------------------------------|--|
| ER-11, 12, 14, 17, 30 | Dirty disc. | Clean the disc. |
| ER-11, 12, 17, 30 | Scratched disc. | Replace the disc. |
| ER-14 | Unrecorded CD. | Check the disc. |
| ER-10, 11, 12, 14, 17, 30, A0 | Electrical or mechanical problem. | Turn the ignition ON and OFF, or switch to a different source, then back to the CD player. |
| HEAT | CD player overheating. | Discontinue play until the machine temperature drops. |

Specifications

General

| | |
|--------------------------|---------------------------------------|
| Power source | 14.4 V DC (10.8 — 15.1 V allowable) |
| Grounding system | Negative type |
| Max. current consumption | 10.0 A |
| Dimensions | |
| (DIN) (chassis) | 178 (W) × 50 (H) × 150 (D) mm |
| (nose) | [7 (W) × 2 (H) × 5-7/8 (D) in.] |
| | 188 (W) × 58 (H) × 22 (D) mm |
| (D) | [7-3/8 (W) × 2-1/4 (H) × 7/8 (D) in.] |
| (chassis) | 178 (W) × 50 (H) × 155 (D) mm |
| (nose) | [7 (W) × 2 (H) × 6-1/8 (D) in.] |
| | 170 (W) × 48 (H) × 17 (D) mm |
| | [6-3/4 (W) × 1-7/8 (H) × 5/8 (D) in.] |
| Weight | 1.5 kg (3.3 lbs) |

Amplifier

| | |
|--|---|
| Continuous power output is 15 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD. | |
| Maximum power output | 35 W × 4 |
| Load impedance | 4 Ω (4 — 8 Ω allowable) |
| Preout output level/output impedance | 500 mV/ 1 kΩ |
| Tone controls | |
| (Bass) | ±12 dB (100 Hz) |
| (Treble) | ±12 dB (10 kHz) |
| Loudness contour | +10 dB (100 Hz), +7 dB (10 kHz) (volume: -30 dB) |

CD player

| | |
|---------------------------|---|
| System | Compact disc audio system |
| Usable discs | Compact disc |
| Signal format | Sampling frequency: 44.1 kHz Number of quantization bits: 16; linear |
| Frequency characteristics | 5 — 20,000 Hz (±1 dB) |
| Signal-to-noise ratio | 94 dB (1 kHz)(IHF-A network) |
| Dynamic range | 90 dB (1 kHz) |
| Number of channels | 2 (stereo) |

FM tuner

| | |
|--|---|
| Frequency range(Except for DEH-436/X1M/ES, 236/X1M/ES) | 87.9 — 107.9 MHz |
| Frequency range(DEH-436/X1M/ES, 236/X1M/ES) | 87.5 — 108 MHz |
| Usable sensitivity | 11 dBf (1.0 μV/75Ω, mono, S/N: 30 dB) |
| 50 dB quieting sensitivity | 16 dBf (1.7 μV/75Ω, mono) |
| Signal-to-noise ratio | 70 dB (IHF-A network) |
| Distortion | 0.3% (at 65 dBf, 1 kHz, stereo) |
| Frequency response | 30 — 15,000 Hz (±3 dB) |
| Stereo separation | 40 dB (at 65 dBf, 1 kHz) |
| Selectivity | 70 dB (2ACA) |
| Three-signal intermodulation (desire signal level) | 50 dBf (two undesire signal level: 110 dBf) |

AM tuner

| | |
|--|----------------------------|
| Frequency range(Except for DEH-436/X1M/ES, 236/X1M/ES) | 530 — 1,710 kHz |
| Frequency range(DEH-436/X1M/ES, 236/X1M/ES) | 531 — 1602 kHz |
| Usable sensitivity | 18 μV (25 dB) (S/N: 20 dB) |
| Selectivity | 50 dB (±10 kHz) |

Note:

Specifications and the design are subject to possible modification without notice due to improvements.